ANCIENT EGYPT

1929. MARCH. PART I.

CONTENTS.

1. THE SHEPHERD KINGS IN PALESTINE.
FLINDERS PETRIE.

2. A PORTRAIT HEAD OF SENUSERT III.
R. ENGELBACH AND ISMAIL SHEHAB.

3. THE CERASTES IN ROYAL NAMES.
M. A. MURRAY.

4. REVIEWS.

5. JOURNALS.
ANNALES DU SERVICE.
SYRIA.
REVUE DE L'ÉGYPTE ANCIENNE.
ARCHIV ORIENTÁLNÍ.

6. NOTES AND NEWS.

EDITOR, PROF. SIR FLINDERS PETRIE, F.R.S., F.B.A.

YEARLY, 7s. POST FREE. QUARTERLY PART, 2s.

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.

MACMILLAN AND CO., LONDON
AND NEW YORK.

ANCIENT EGYPT. Net price of each number from booksellers is 2*s*.

Subscriptions for the four quarterly parts, prepaid, post free, 7*s*., or 2 dollars, are received by Hon. Sec. "Ancient Egypt" (H. Petrie), University College, Gower Street, London, W.C. 1.

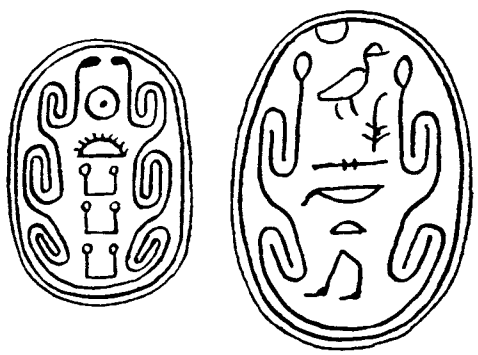
Books for review, papers offered for insertion, or news, should be addressed:—

Editor of "Ancient Egypt,"
University College, Gower Street, London, W.C. 1.

ANCIENT EGYPT

1929. JUNE. PART II.

CONTENTS.



1. THE AGE OF EGYPT. FLINDERS PETRIE.
2. THE SIGN OĂBT. M. A. MURRAY.
3. A REPAIRED STEELYARD. R. ENGELBACH.
4. FALCON-FACE. L. KEIMER.
5. RECENT ANALYSES. FLINDERS PETRIE.
6. REVIEWS.
7. JOURNALS.
   ZEITSCHRIFT.
   COMPTES RENDUS.
8. NOTES AND NEWS.

EDITOR, PROF. SIR FLINDERS PETRIE, F.R.S., F.B.A.

YEARLY, 7*s*. POST FREE. QUARTERLY PART, 2*s*.

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.

MACMILLAN AND CO., LONDON
AND NEW YORK.

ANCIENT EGYPT. Net price of each number from booksellers is 2*s*.

Subscriptions for the four quarterly parts, prepaid, post free, 7*s*., or 2 dollars, are received by Hon. Sec. "Ancient Egypt" (H. Petrie), University College, Gower Street, London, W.C. 1.

Books for review, papers offered for insertion, or news, should be addressed:—

Editor of "Ancient Egypt,"
University College, Gower Street, London, W.C. 1.

ANCIENT EGYPT

1929. SEPTEMBER. PART III.

CONTENTS.

1. THE EGYPTIAN LILY. — FLINDERS PETRIE.

2. ALEXANDER AND AMMON. — J. GRAFTON MILNE.

3. REVIEWS.
   - THE HITTITE EMPIRE.
   - STAAT AUS DEM STEIN.
   - THE COMPOSITION OF JUDGES.

4. JOURNALS.
   - ZEITSCHRIFT.
   - MUSEUM OF FINE ARTS, BOSTON.
   - PALESTINE EXPLORATION FUND.
   - COMPTES RENDUS.
   - ORIENTAL INSTITUTE, CHICAGO, ETC.

5. NOTES AND NEWS.

EDITOR, PROF. SIR FLINDERS PETRIE, F.R.S., F.B.A.

YEARLY, 7*s*. POST FREE. QUARTERLY PART, 2*s*.

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.

MACMILLAN AND CO., LONDON
AND NEW YORK.

ANCIENT EGYPT. Net price of each number from booksellers is 2*s*.

Subscriptions for the four quarterly parts, prepaid, post free, 7*s*., or 2 dollars. are received by Hon. Sec. " Ancient Egypt " (H. Petrie), University College. Gower Street, London, W.C. 1.

Books for review, papers offered for insertion, or news, should be addressed:—

Editor of " Ancient Egypt,"
University College, Gower Street, London, W.C. 1.

ANCIENT EGYPT

1929. DECEMBER. PART IV.

CONTENTS.

1. THE COPPER AXE.
E. A. MARPLES.

2. EGYPTIAN OBJECTS FROM RUSSIA.
IGOR SNEGUIREFF.

3. A FURTHER NOTE ON THE KA.
G. D. HORNBLOWER.

4. BETWIXT EGYPT AND NUBIA.
J. H. DUNBAR.

5. REVIEWS.
PLURAL AND DUAL IN EGYPTIAN.
SUMERIAN TABLETS, KYOTO.
PREHISTORIC SITES IN MANCHURIA.

6. JOURNALS.
ANNALES DU SERVICE.
ANNALS OF ARCHAEOLOGY.

7. NOTES AND NEWS.

EDITOR, PROF. SIR FLINDERS PETRIE, F.R.S., F.B.A.

YEARLY, 7*s*. POST FREE. QUARTERLY PART, 2*s*.

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT.

MACMILLAN AND CO., LONDON
AND NEW YORK.

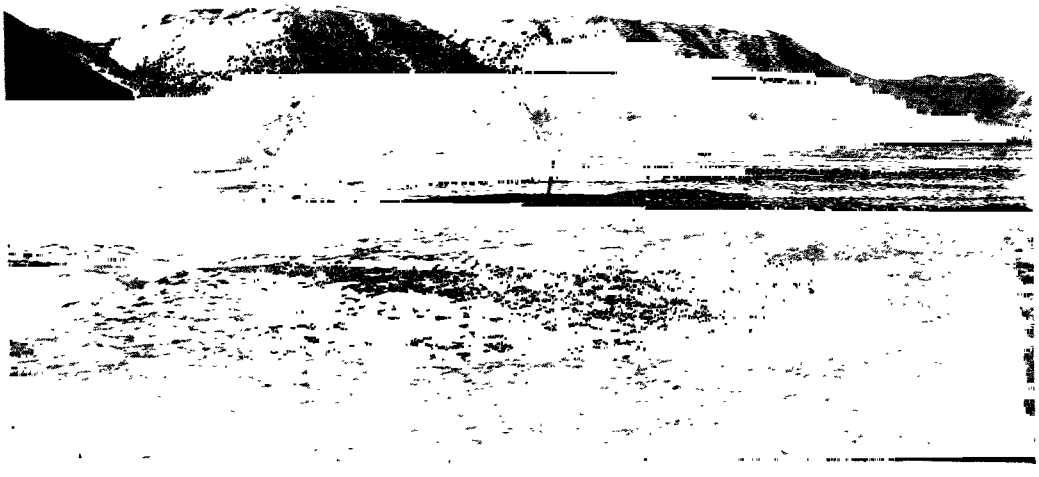
ANCIENT EGYPT. Net price of each number from booksellers is 2*s*.

Subscriptions for the four quarterly parts, prepaid, post free, 7*s*., or 2 dollars, are received by Hon. Sec. "Ancient Egypt" (H. Petrie), University College, Gower Street, London, W.C. 1.

Books for review, papers offered for insertion, or news, should be addressed:—

Editor of "Ancient Egypt,"
University College, Gower Street, London, W.C. 1.

1. BETH-PELET. WEST AT TOP, WADY GHUZZEH BELOW.
Devious Lines on Hill Top are Military Trenches. Excavated Fort at right.
Royal Air Force Official. Crown Copyright reserved.



2. BETH-PELET FROM SOUTH-WEST.

THE SHEPHERD KINGS IN PALESTINE.

EXCAVATIONS AT BETH-PELET. II.

THE excavations of the past winter at Beth-pelet have produced valuable results in Egyptian history, by providing evidence of the culture and the political power of the Hyksos. These Shepherd Kings, the kin of Abraham, though nomads, had a considerable civilisation, just as at present the Bedawy have beautiful embroidery and metal work, though often compelled to shift their quarters by varying rainfall. The map in our last number shows how Beth-pelet lies in the half-arid wilderness of the south country. It was, however, strongly held, as it commanded the most southern pasture on the way to Egypt.

The Hyksos mode of defence was first found in Egypt when I worked at Tell Yehudiyeh and also at Heliopolis. It was not by stone or brick walling, but by great earthworks; as such, it has been already compared by Dr. Albright with the North Syrian forts and the earth forts of Central Asia. In Egypt we found square enclosures with rounded corners. The best example, at Tell Yehudiyeh, had the outer face steeply sloping, and covered with white stucco, so that it would be impossible to gain foothold on it without cutting steps.

The same principle of defence has now been traced at Beth-pelet, where it was adapted to a hill fort, trusting to steep glacis slopes, on which no approach was possible. A hill was chosen having on the east a precipitous face to the stream course of the Wady Ghuzzeh (*see* Fig. 1). At each end, a slight natural ravine of drainage was deepened and lengthened, until it curved around the end of the hill, with smoothly cut sides, different from the usual row of drainage gullies. At the back of the hill, where a gentle slope on the west united it to the general plain, a wide trench was dug, 80 ft. across, which joined the heads of the north and south ravines. Thus the whole hill was isolated by inaccessible slopes (Fig. 2).

This huge western trench had on the outer side a slope of 40°, 28 ft. long. This slope dropped at the bottom into a ditch 7 ft. deep. Thus any attacker, on slipping down the slope, would fall into the ditch and be easily overwhelmed by stones rolled down the inner slope. On the side of the fort, the ascending slope was of 34°, too steep to stand or crawl upon, and rose up 62 ft. toward the fort. At the top of this slope was the fort bank of marl, rising 15 ft. above the dwellings within, and capped by a breastwork wall, so that the defenders could rake the marl slope and the trench below it.

The deep ditch below the slope is now buried under 35 ft. of sand dune, piled up against the fort mound. It was only in trenching the sand in search of any tombs, that the hard ground was found to descend amazingly; on carrying the cutting forward up to the fort, the nature of the defence came to light. In order to test the matter, another large cutting was made at the head of the southern ravine; this uncovered the similar slopes and the ditch between them.

3. ENTRANCE VALLEY FROM WEST; GATE SILL HALF-WAY.

4. BLOCKS OF GATE SILL, FROM NORTH-WEST.

5. Fire Bowl in XVIIIth Dynasty Residency.

6. Door Sill and Foundation Walls, XVIIIth Dynasty.

There had been an earlier fortress wall, probably of the XIIth dynasty, which was buried in the Hyksos marl wall. But the makers of the great trench, which is so much like the work at Yehudiyeh, were doubtless the Hyksos whose tombs we uncovered in the plain below.

The great trench fell into disuse at the conquest by the Egyptians, who built a stout wall of defence above the Hyksos bank. The sand blew into the ditch, and covered the foot of the slopes. Then the steep face of marl offered a convenient place for Egyptian tombs. These were crowded together, and are dated by scarabs and vases of the XVIIIth dynasty.

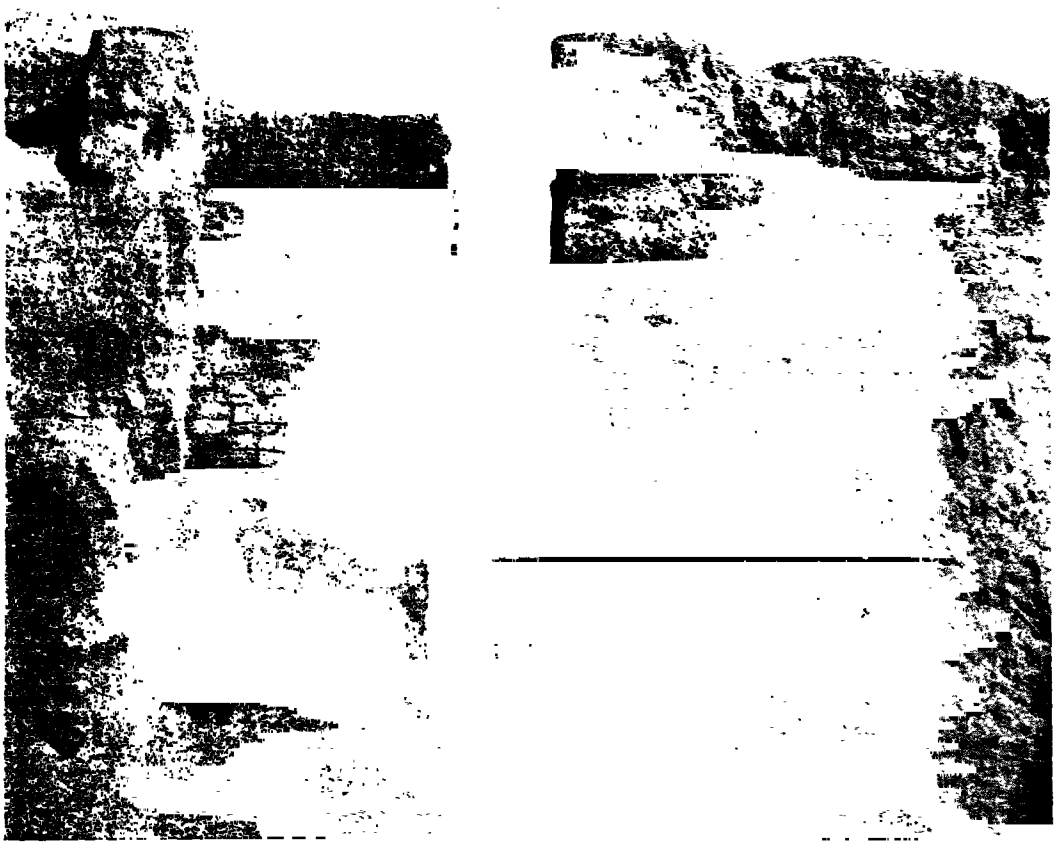
The whole hill top thus fortified was about 120 ft. above the stream, about 700 ft. long, and half that distance across at the widest. At present the top area is about three and a half acres. The access to it was carefully guarded. The northern ravine was lengthened out to 500 ft., curling round the end of the hill and sloping upward at the north-west (Fig. 3). This approach was cut as a narrow passage between faces of native marl and, diagonally across it, a gateway was placed (Fig. 4). Thus only a few feet were left between the side of the passage and the skew gate, to render it impossible to use a battering-ram, or to bring many men to bear on the gate Also the space was so narrow that stones if rolled down the slope would be certain to crush any one attacking the gate. This gateway is between the end of the west wall and the end of the north wall, so probably the wall was continuous, and ran above the gate. This form of the built gate and walls was a later work than that of the Hyksos, but no doubt the ravine was their original entrance.

The earliest building upon the hill was of about the XIIth dynasty, as shown by a scarab, and in the small area that we reached at 45 ft. down there are three building levels below the deep foundations of the Residency of the XVIIIth dynasty. Time did not allow of extending this deep work in the present season.

Within the fortress stood the Residency of the XVIIIth and XIXth dynasties, which is dated by the pottery; it was a stout block of building, 81 ft. from east to west, and over 70 ft. across. The outer wall was 6 to 7 ft. thick, and the inner walls 4 to 5 ft. The construction differs from that of other Egyptian buildings; the foundations, sunk to varying depths of 2 to 10 ft., were all of brickwork, well laid. But above the floors only a small part was of brick, and most of the internal walls were of rammed earth, covered with an inch of plaster. This may have been only a reconstruction after partial demolition. There was, later, a great destruction of all the walls by fire, so fierce that it fused some of the pottery. As this follows on the XIXth dynasty, it seems to be due to the conquest by the Israelites of whom it is often recorded that they " burnt the city with fire." That the lower brickwork was only a foundation is proved by the absence of doorways (Fig. 6). After the burning, the building was somewhat repaired by restoring the entrance wall in different brick, and out of line, also placing some thin cross-walls over the ashes. The floor levels were at 368 ft. 2 ins. to 369 ft. 7 ins.

The building was planned with the entrance at the east end of the south face, approached by a flight of five steps. These led up to a porch, 13 × 5 ft., which covered the doorway. This porch was paved with a hard cement of crushed shells; the opening being at the south-east corner, yet facing the west, checked any draught from blowing in. The first room was 13 ft. square, and led into a hall along the east side, 23 × 13 ft.; at the north end of this was a lobby, and steps at the south-east corner led up to the roof. From the hall there opened a central court, 30 × 22 ft.; this, like other parts, was roofed with cedar beams. The court was surrounded by chambers on

7. PORTICO OF ISRAELITE PERIOD.
B, *C*, Door Jambs; *A*, *D*, Column Bases



8. GREAT WALL OF SHISHAK, IST. *B* = Base.
LINING WALL, 2ND, ON ASH BED.

the three other sides, and in the south-west corner was another stairway to the roof. At the side of a northern door lay a recess, in which was a circular fire-pit in the floor, all well lined with cement (Fig. 5).

The doorways were of two types. The main doors had posts five inches square, erected before the brickwork which was built against them. Lesser doors were fixed by a fillet of wood of about half of that size, let into the plastering. The roof was carried by large cedar beams, of which a few unburnt portions remained in the midst of the charcoal. The covering was of mud plaster, doubtless faced outside with stucco.

The whole building had been thoroughly rifled. The only remains were a jar of sulphur (probably from a mine near by, still worked), and close to it the burnt fragments of a large wooden box; this had been veneered with ivory, on fragments of which are engraved scenes. All of this was encased by us in paraffin wax, for transport, and it may be possible to make some reconstruction of it. The box had contained masses of colour, yellow, red and malachite green.

After the destruction of this Residency there was a partial restoration as mentioned, but no considerable building succeeded it for a long time. The burnt walls crumbled down, and the level of the hill rose with ruins some 5 ft. deep. Then followed some much poorer building, laid on cobble-stone foundations a foot thick. The pavings of this were at about 375 ft. level. The main part which we uncovered was a portico, but it had no relation to the older buildings. It faced north, with a doorway flanked by dwarf walls, each bearing a column. The doorway led out to a paved area, irregularly laid. This portico was 24 ft. long and 9 ft. deep, and apparently adjoined another building at a higher level to the south of it. This should, by its level, have belonged to the Pelethites of David's time, and if, as we suppose, they were a body of nomad mercenaries, it is not to be expected that they would have required any substantial buildings like the Egyptians. A great bed of ashes, up to 9 ft. thick, which overlay most of the northern end of the site, pointed to some centuries of slovenly occupation, when rubbish was left to accumulate. Flint flaking was then in use, and a shoal of fragments and bad flakes was thrown into an old corn pit, at about the close of this ash-bed occupation.

After some 7 ft. of rubbish and poor building had raised the mound, there came an entire reconstruction in fine Egyptian style. The pottery immediately underlying it belongs to about 1100 B.C.; the foundations are sunk deep, and laid in clean sand, which is also between the bricks, like the buildings of Shishak at Gerar, 930 B.C.; it cannot be doubted that this is the period of this new Egyptian occupation. The floors are at 382 ft. level.

The great feature of this age was an immense wall of yellow bricks, which remains along the northern end (Fig. 8). This doubtless extended round to the north-west gateway, above which similar walling exists. But the wall along the western side seems to have been earlier, as the bricks are of redder clay, and of lesser size, like those of Gerar in the XXth dynasty. The great wall on the north is 16 to 17 ft. thick, still standing 9 ft. above the floor level, and sunk 8 ft. below the floor level into the ash bed. With such a thickness it was probably 30 or 40 ft. high. On the inner side it was widened by a lining wall above the floor level, 6 ft. thick, thus making a platform 23 ft. wide for defence, on the top of the steep north slope.

Within this fortification was the Residency of Shishak, a block of building with yellow bricks like those of the great wall. It was 35 × 56 ft. outside, with an annex extending it to 84 ft. long. It had a central court, 31 × 14 ft., with a dozen

9 FORT OF VESPASIAN. LOOSE BLOCKS IN GATEWAY.

10. ROMAN HOUSE. HALL OF COLUMNS IN DISTANCE.

rooms around it. In the brickwork of the flooring were two ivory figures of Hathor like those of the XXIInd dynasty from Gerar; with these was a figure with pointed cap, as illustrated in our last number.

After the great building of Shishak there was no general reconstruction till the Roman age. The great activity of Psamtek at Gerar seems to have sufficed for this region, as his defence was against the Scythians at Askelon, rather than against the south country. There was continued occupation of the place up to about 390 ft. level, as shown by the top of a large corn pit which was filled with pottery of about 600 B.C.; the buildings of this period, however, were small and insignificant, based at between 390 and 393 ft. level.

Some time before the Roman age, there existed an important building, of which many blocks were found scattered and re-used at both ends of the hill and near the middle. These blocks were of well squared local sandstone, covered with very fine white stucco, which has perfectly survived except where bruised by heavy blows. The walls were 16 ins. thick. Where the site of the building stood, and the date of it, are quite unknown. We hope to make some search for it next year.

The Roman period of building is distinguished by large numbers of the Judaean coins of Nero, in fresh condition. After these there is one coin of Antoninus of Gaza, but none of the IIIrd century, or of the Constantine or Justinian families which are so usual elsewhere. The activity here does not seem to have extended to the second century, and was mostly about 70 A.D.; it was therefore due to the Jewish war of Vespasian.

The squared stone of the fort had been almost entirely removed, down to the cobble stone foundations (Fig. 9). From these it appears to have been 66 ft. east to west, and 52 ft. across. An open court was against the north wall, 35 × 20 ft., with nine or ten rooms against the other three sides of it. The outer wall was probably 4 ft. thick. A floor remained at 397 ft. 5 ins. level; the cobble foundations sank in the mound to 391 ft., and on the south of the fort to 388 ft., thus cutting through the buildings of Greek age. West of the north end the ground sank lower, and the Roman buildings were cut into the side of the older mound, with a floor at 379 ft. level. A hall, here, has two columns built of sandstone drums, covered with stucco: this is inferior to the finely stuccoed blocks of the unknown building, which were brought here for reconstruction. In slight hollows of the floor there were three groups of Judaean copper coins of Nero.

The top of the hill was covered with cobble and mud buildings of the Roman age. Two of the houses which we cleared (Fig. 10) may be noted as examples. One was 48 46 ft. over all. A great gate on the south led into an entry court, 17 × 14 ft.; next came a hall 19 12 ft., then a court 21 × 14 ft. with a tank; seven side-chambers opened on these courts. The other house was 40 × 38 ft. over all, with similar rooms, and a bath-room 10 6½ ft. with cistern.

A great work of Roman age is the revetment at the foot of the hill, built to prevent the stream from washing away the cliff. Though this has been heavily plundered for squared stone, it still fulfils its purpose; recently the flood has cut in behind the south end, and it may eventually be isolated in the Wady, with the soil behind it washed out. It is between 20 and 31 ft. thick and 300 ft. long. The face was all of large squared blocks of sandstone; exposed courses have been carried off, but later burrowing by the stream has uncovered two more courses below, without reaching the base. The body of it is of rough sandstone blocks, all set in hard lime mortar. In this I succeeded in finding a piece of ribbed jar like that of the Ist century. No doubt, therefore, the construction was part of the large work of Vespasian.

11. HYKSOS POTTERY. TOMB 550.

12. INTERIOR OF TOMB 550.

The CEMETERIES occupied the greater part of the labour this year. The whole ground has been more or less covered with blown sand, arrested by the rise of the hill. It buried the cemetery area up to as much as 8 ft. deep. This greatly increased the labour of finding the tombs, as the whole surface must be bared before search trenches can be cut, to distinguish soft places where tombs have collapsed. The area of cemeteries extends for about a quarter of a mile from the hill, along the north and west sides.

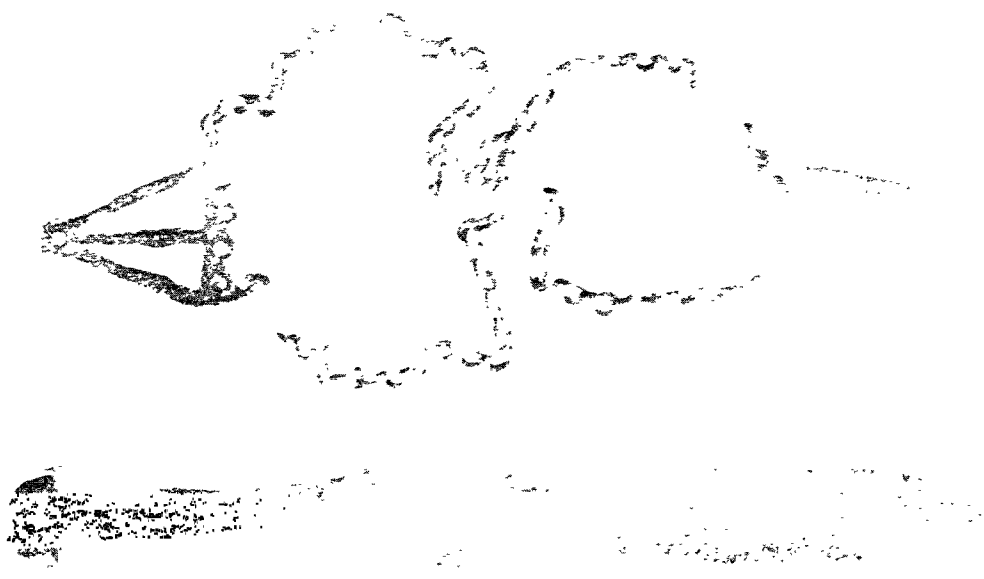
The cemetery of most historic value is that of the Hyksos period, unmistakeably dated by the abundance of Hyksos scarabs and a peculiar type of tomb. This year, part of the ground could be worked, and next year the rotation of crop and fallow will allow of the rest of the cemetery being cleared. Nearly fifty tombs have been found, half of which contained scarabs and pottery, which yielded relative dating. It is thus possible to put some twenty tombs into their order of sequence by the changes in the scarab types. At first there is the nearest resemblance to Egyptian work, and good scroll borders. This fine work fades out, animal figures begin, then twist patterns, and coarse mechanical designs. Following such an order, we find in the first half of the series a continual increase in forms of pottery, in the second half only a disappearance of types. This marks a continuous life, followed by a decadence. For distinction we will here letter this order of tombs from *A* to *X*. *A* has the nearest affinity to the Middle Kingdom style. *B* has the name of a new Hyksos king, Maot-neb-ra, the same name as the later king Amenhetep III. The tomb *D* has a scarab of a very well-known Hyksos king, Maot-ab-ra. Neither of these kings are among the six great Hyksos kings who formed the XVth dynasty, nor are these scarabs like those earlier ones. Our list therefore does not begin till the XVIth dynasty. Other tombs follow, with increase of pottery types down to *N*. At that point a decrease of types sets in, either marking a change in the dynasty or the beginning of the XVIIth dynasty.

Now the most important matter is that at R, after the decadence had begun, there occurs a scarab of the well-known vezier Har or Hal. There are plenty of his scarabs from Egypt (a dozen in University College) and this scarab is of the same design; but three variants in forms of hieroglyphs mark it as of Palestinian work. The *ha* plant has the three stems radiating from a centre instead of rising from a flat base; the *nt* crown has a triangular body, more like the primitive form; and the *mr* sign is like a twisted whip. The conclusion from these scarabs is that Har was vezier over both Palestine and Egypt, and that therefore, as late as the middle or end of the XVIth dynasty, there was a united rule of a single Hyksos king over both countries. This is the first piece of political information which shows how long the Hyksos supremacy was effective, and disposes of the frequent assertion that they were only a herd of local rulers who were contemporary. The nature of the variants of the signs shows that the engraver knew their origins, and was not blindly copying them. The scarab was made to order, with its full meaning, and was not an ignorant transcript. A striking fact is that the god most usually represented on these scarabs is Ra, throughout this Hyksos age. It reflects on the veracity of Hatshepsut in saying that the Hyksos "knew not Ra."

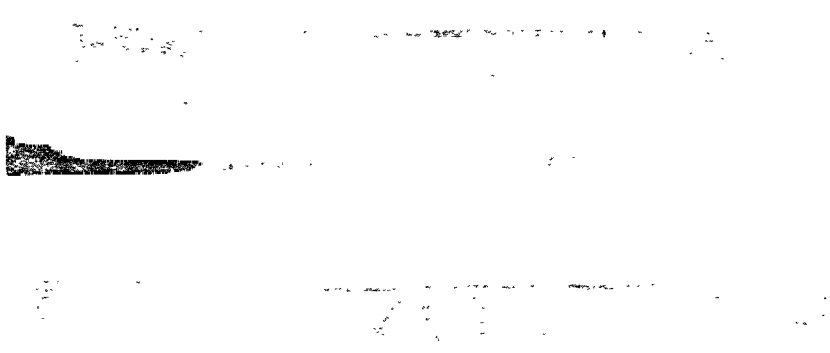
There are many small glazed vases for *kohl* during the earlier half of this period; also daggers both of the triangular blade without a tang, and with the Cypriote long tang. The pottery is abundant, thin, and finely formed, of nobler grace than any of later times (Fig. 11). As many as twenty varieties are found in some of the tombs. The very large jars without handles belong to the earlier half of the period.

The tombs, cut in the hard marl, have a steep stairway descending to a small entrance, which was blocked with a slab of stone or several stones. This led in a few

13. PHILISTINE TOMB 552.



14. DAGGER AND CHAIN, XIITH CENTURY B.C.



15. COPPER BOWLS, XIITH–VIIITH CENTURIES B.C.

early instances to a single chamber, but usually to a bi-lobate chamber, divided by a pier of marl which approached the doorway, so as to support the roof (Fig. 12). The bodies lay on the ground, stretched at length, but with the legs irregularly placed. Most of the tombs had been robbed anciently; but in quite undisturbed tombs there was scarcely any goldwork.

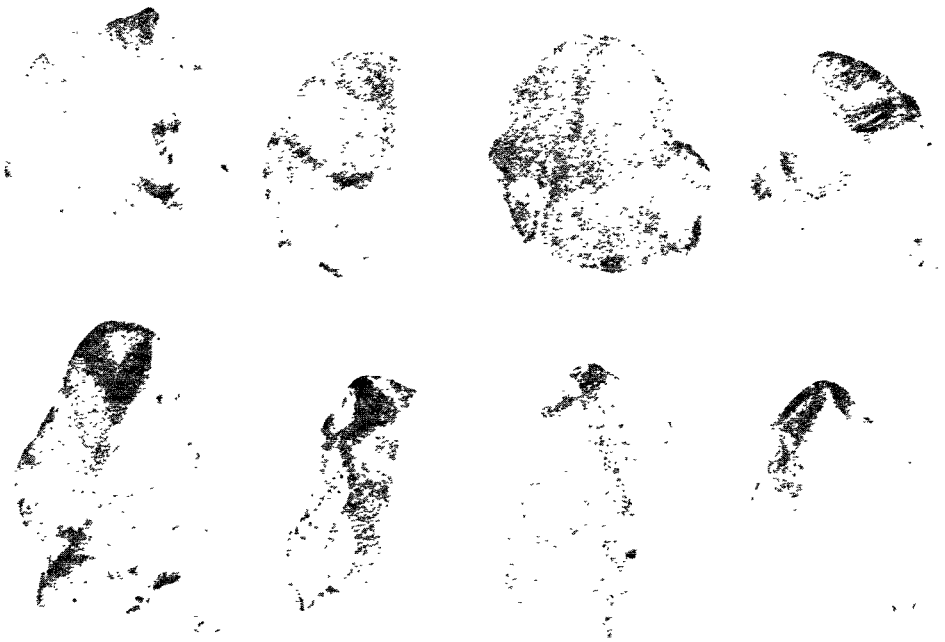
To this type of tomb there succeeded a single domed chamber, with a sunk gangway between the benches on three sides, upon which the bodies and offerings were placed (Fig. 13). Eight bodies and two dozen scarabs were found in this, dating from Amenhetep III to Ramessu II, mostly of Palestinian work. The most interesting of these had a vigorous figure of the Syrian horned god, with a long streamer hanging from his peaked crown; with a spear he is striking the tail of a gigantic uraeus, which he grasps in the other hand. This seems to symbolize the triumph of Syria over the royal serpent of Egypt, and is a memorial of the downfall under Akhenaten. There were also some vases of purely Aegean pottery. This tomb had been cut in the lower part of the great glacis on the west of the city.

The bench type of tomb continued to develope in the XIXth dynasty. The gangway was widened at the entrance of the chamber; next, a double widening appears, and lastly the gangway was prolonged, to enter a smaller chamber at the back of the first chamber. At this stage the coarse pottery coffins came into use. There are six types of pottery which ran through from the Hyksos period, but only in single examples; in general, there was a sharp change, and the few exceptions may be due to re-use of an old pot. Painted Philistine pottery occurs in these tombs, some in surprisingly fresh condition, better than any known elsewhere. The usual motive is the swan preening the wing. Large quantities of plain pottery are found; in one tomb were no less than eighty vessels, of fifty-eight different varieties. The large number of skeletons found in some tombs, half a dozen or a dozen, show that they were family vaults, in use during several generations.

In this Ramesside period, iron daggers and knives occur along with bronze (Fig. 14); one steel dagger has a cast bronze handle. In one tomb a Cypriote dagger with long tang, like those of the XIXth dynasty, occurs with a bronze or copper bowl, having a flat base. These bowls are found in other tombs later, and led on to the round-based bowls of about the XXIInd or XXIIIrd dynasty (Fig. 15). A round-based bowl with flaring flange is thickly cast, and accompanies a wine-strainer and long dipper; these might be supposed to be Pompeian by the form and decoration, but the early age is exemplified by the same forms appearing in an Etruscan tomb-painting of about the XXVIth dynasty. Probably in both ages these types were borrowed from Persia.

Of later times there are many tombs of Greek age, but without any painted vases, although fragments of such are found in the town. There were probably monuments of limestone over the tombs, as in the cemetery is a large kiln, much burnt. The pieces of stone found in it did not bear any sculpture.

In yet another way the season has been most fruitful. Our work boys, on seeing that we rewarded finding a flint pick in the work, began to hunt for such in the Wady. When the work-hours were short in Ramadan the boys hunted in the afternoon, and soon there were daily collections by more than thirty hunters, including some men. They came and sat in a row with their gatherings before them, to be selected. In a short time we had over two thousand in the store-room, a stack in the courtyard, and banks of rejected ones outside our walls, among which were many partly worked.



16. MOST WORN OVATES AND PICKS.

17. TWO HANDED PICKS.

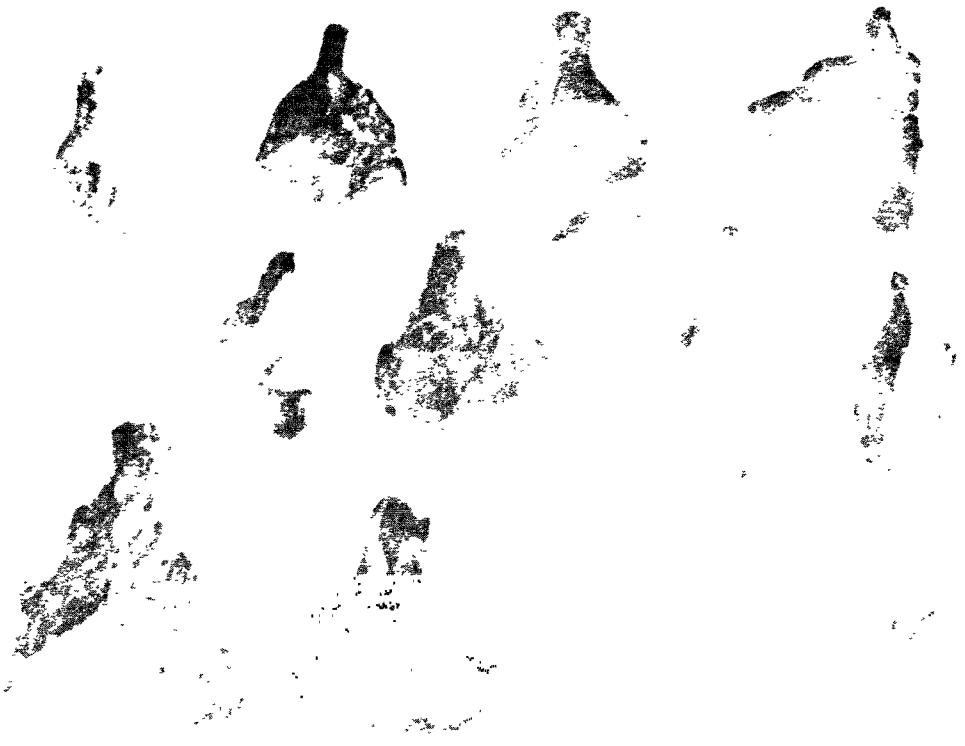
In order to wield such a mass, it was necessary to select closely and, to do that, some classification was needed. In the general appearance there was no sign that these flints had ever been bedded in gravel after being worked, there was no staining, and rarely any white patination. There seems no reason to doubt that workers dropped them in and around the valley, they were washed down into the stream, and rolled there until they were picked out for us. In this case, the amount of effacement is some indication of relative age. On selecting the most effaced, on which the flaked surfaces had been almost destroyed, they proved to be triangular picks and ovates of the rudest types (Fig. 16). The purpose of the pick and " rostro-carinate " appears to have been for root-grubbing, which provided the only vegetable food during winter. The ovates with a fairly sharp edge may well have been for cutting green food in summer. The " rostro " flints are of very rude form here, and from their resemblance to a ness of land, we termed them " nesses." The largest picks have one face quite flat, and could only be grasped between two hands (Fig. 17). There is a large number of borers (Fig. 18), and these were further developed with natural ball ends to fit the palm of the hand; also with skew handles, so as to get a powerful drilling turn in work, some handles being quite flat on the top so as to apply a heavy pressure (Fig. 19).

Most primitive of all are flints picked up to bash or crush, and here called " bashers." Some of these are entirely natural flints, merely battered on one edge; others have been somewhat shaped to give a better edge for use. More advanced choppers are long and thin forms, with one edge battered. Heavy axes were also shaped, equally on both sides. The sliced flints (or Levallois flakes) have left many cores, known in Egypt as " donkeys' hoofs."

So far, we had encouraged the boys to bring in all they could from the rolled wady bed, where the relative position had no meaning; but one day there appeared flaked cores and adzes of early neolithic style, whitened by lime soil, and it was evident that a settlement had been tapped. Mr. Starkey, who generally looked after the flints, judiciously refused to give anything for these, but offered a couple of day's wages to the boy who would show us the site. Thus we gained the knowledge of many sites without encouraging their destruction. These could not be immediately worked, but one site (Sulmanieh) was well sampled through a depth of 3 ft. in recorded levels. Mr. Myers attended to this, and brought in many hundreds of microlith cores of dusky translucent flint and innumerable flakes. Such work seems to have survived till the late use of microliths in the working of very delicate lunate flakes, found in a Hyksos grave, presumably as barbs for arrows. The whole subject of the late use of palaeolithic and neolithic types is opened up by the various examples of historic age found this year.

Palestine is so rich a field for early sites of work that there are hundreds of such spots to be searched; and, in order to secure results of historic value, each group should be uniformly managed by a separate party. Just as Miss Garrod has taken the northern caves as her speciality, so each of the great wadys should be taken in hand by one body, in the same way as our School has taken up the Wady Ghuzzeh. Happily the requirement of systematic work is a principle with Mr. Richmond, who will not tolerate in Palestine the reckless exploiting which has ruined sites elsewhere.

In all the excavation here, the diggers search the earth and set aside every potsherd. These are reviewed carefully to see that no inscriptions escape us, and all pieces that are distinctive in date are marked with levels and preserved. The types are identified if possible with forms already known, which serve to give a date; these dates of each stratum are then reviewed, some are of older pottery that has survived, others are later



18. BORERS.

19. SKEW HANDLED BORERS.

due to disturbance of soil, but a majority hold together and serve to show the general period of a level. This, in turn, can then be dated more precisely by movements in history already known. Other kinds of objects are also characteristic of period, but are not so frequent in every age as the pottery.

Happily, the selection for the Palestine Museum at Jerusalem is based upon the preservation of whole groups from tombs. These may be supplemented by examples of types which do not occur in large groups, in order to fill up the series of types. But it is the aim of the Director, Mr. Richmond, to weed out from the Museum all material that is not levelled or dated, whenever similar objects are procured in ascertained groups. Thus the collection will eventually be reliable as an historical view of all periods in Palestine.

On reviewing the whole season at Beth-pelet, it is clear that there is no other place yet known which is so promising for revealing more of Egyptian and patriarchal history during the dark period of the Hyksos dynasties. The cemetery of the XVth dynasty has yet to be found, also that of the XVIIIth dynasty, which was certainly important during the long and active reign of Tahutmes III. To continue work here is needful for the history of both Egypt and Palestine. The complete clearance of the Tell is far beyond English resources, as it would cost probably fifteen or twenty thousand pounds. Yet some search should be made for extensions of the Jewish stratum at the fort, and for the site of the fine sandstone building. It is difficult to know where to stop, but probably after another season here it would be more profitable to take a portion of another site. It is impossible in the next few centuries to work completely more than a few *per cent.* of all the Tells in the world which await us, and the revelation of history will be best carried out by taking a large sample from many sites. So long as a full record is published of all that is found, with plans, levels, and figures, it will always be open to future work to resume such researches, and carry them farther.

Our hope that a Palestine Museum on an effective scale may be founded in London has made us refrain from distributing the collection of the last three years, which lies in boxes at University College. This has cut off most of the support which we had from museums, and but for the zealous help of Sir Charles Marston our work could not have been carried out so successfully this season. It is hoped that, during the next few months, special donations will be sent in, so as to enable the researches of next season to be carried out on an adequate scale.

FLINDERS PETRIE.

A PORTRAIT HEAD OF SENUSERT III, FROM KARNAK.

SOME unexpected results were recently seen on taking a new photograph of the head of the red granite colossus of Senusert III, which now stands against a pilaster in a rather dark part of the entrance hall of the Cairo Museum. This head was originally published by Legrain in his *Statues de Rois et de Particuliers,* No. 42011; his photograph, shown in Fig. 1, which appears to have been taken in full daylight with ordinary plates, shows no trace of paint. The face, in fact, is perhaps less full of life than those of the other portraits known of this king.

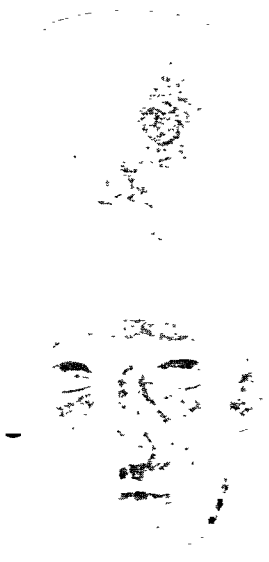


FIG. 1.

FIG. 2.

Having had occasion to obtain a small photograph of the head of this colossus, to compare it with a collection of the portrait-heads of the XIIth dynasty in the Cairo Museum and elsewhere, an exposure of a quarter of an hour had to be given, since the Cairo Museum was not then supplied with means for efficiently lighting objects for photography. The plates used were panchromatic.

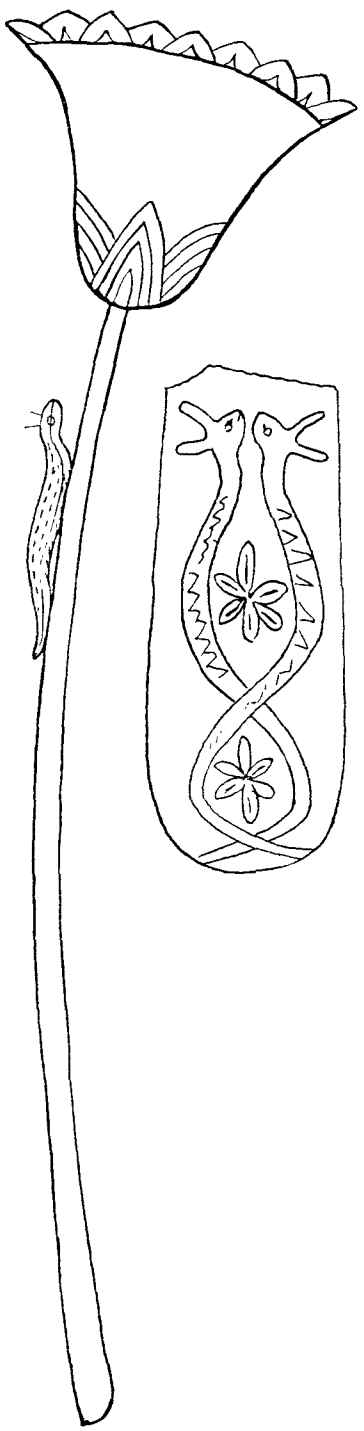
The varied sources of reflected light, in the second picture (Fig. 2), have given effect to the detail of the face, and render this a far more vital portrait. So much expression would not have been suspected on looking at the effect of the single top light in the first figure. Moreover the panchromatic plate has brought out the painting of the eyes, and this might be the portrait of a living man which one would recognize anywhere.

A close examination of the colossus clearly shows that the body, though of good work, is not comparable in technique with the head, and it seems likely that a special artist was employed to portray the royal features. It must be admitted that, in the present case, the artist was a master of his craft.

R. ENGELBACH.

ISMAIL SHEHAB.

THE CERASTES IN ROYAL NAMES.



IT is customary to translate 𓆑 in names as the suffixed pronoun, which is undoubtedly correct wherever the corresponding feminine pronoun is used in the feminine form of the same name, as in Middle Kingdom names, e.g. 𓏏𓆑𓋴𓏏 and 𓏏𓆑𓋴𓏏. In this paper the point to which I wish to draw attention is that 𓆑 in early names may be a noun, and is not necessarily the pronoun of the third person singular masculine. It would then be an ideogram or picture representing the creature whose name it bears.

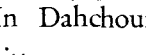
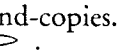
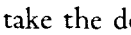
Whether that creature was the horned viper (*cerastes cornutus*) or the slug, or some other animal not yet identified, I am not prepared to say. It is entirely unlike either the viper or the slug; but for convenience of translation I use the word "viper" for the 𓆑 where I consider it to be a noun. If the 𓆑 is neither the viper nor the slug, the question arises as to what other animal it might be. The form of the "horns," even in the earliest example, is unlike any living creature; for in nature horns, unless palmate, are wide at the base and decrease gradually to the tip; whereas the horns of the 𓆑 are narrow at the base and widen to the tip. Palmate horns belong to animals of snowy regions and therefore need not be considered here. The earliest representation of the 𓆑 is on a carved ivory knife-handle of the prehistoric period. This shows an animal definitely reptilian, in all probability a snake. The parallel groups from Mesopotamia and India are clearly of snakes (*Anc. Eg.* 1917, 33). The only example of the creature in natural position is the painting at Drah Abu'l Neggeh, where it is climbing a lotus stem and is certainly a slug. As the XVIIIth dynasty is too late to be of any value in determining the real meaning of any object represented, this can only be accepted as showing what the artists of the New Kingdom believed the creature to be. The 𓆑 is quite unlike the horned viper, whose horns are set immediately above the eyes, are almost as fine as antennae, and curve forwards. The ancient Egyptian knew the viper perfectly, for its characteristic attitude in repose is reproduced in the hieroglyph which determines any word for snake 𓆓.

The sign shows the reptile lying on the ground, not coiled like so many snakes, but arranged in a zigzag. When roused it can straighten itself with lightning rapidity, lashing out in any direction to an incredible distance, and so reaching its unsuspecting prey. When about to bite, the viper opens its mouth so wide as to appear almost to split the head across; this is done to disengage the long sickle-shaped poison-fangs, which lie folded back on each side of the mouth when not in use. The gaping mouth, the gigantic fangs, and the lashing movement combine to make a more terrifying effect than the cobra's spread hood. Viper poison, though as deadly as that of the cobra, is longer in action; if immediate measures can be taken, death may be averted; on the other hand, if the poison is not counteracted or removed, the resultant consequences are agonising, in which respect the poison again differs from the cobra's. Such a creature would naturally impress the minds of a primitive people, like the Egyptians were when hieroglyphs were first introduced; yet the representation of the viper does not occur except as the above-mentioned determinative, where its peculiar attitude is depicted. The gentle little  would hardly express the feeling of the ancient Egyptians to so savage and dramatic a creature as the viper, especially when they were capable of drawing the other deadly snake, the cobra, in its characteristic form; they even raised it to the rank of a deity, and used the sign as an emblem of divinity. Had this been a pictorial representation of the viper, the wide open mouth and the great poison-fangs would have struck the imagination of the artist rather than the inconspicuous horns.

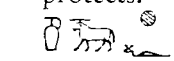
The horns of the  , in early inscriptions, approximate so closely in form to the ears of the Seth-animal that it seems possible that the two creatures may be in some way related. The sign  , like the sign of Seth, is either a highly conventionalised representation of a real animal or, more probably, a more or less exact copy of an artificial object. The arrow in the hindquarters of the Seth-animal developed very soon into a forked tail, which shows that though an object can be altered to a certain extent by ignorant artists the shape remains recognisable. It is therefore not likely that the fine pointed horns of *cerastes cornutus* could have been so changed, even in the prehistoric times, into the broad-tipped excrescences on the head of the  . I do not attempt to identify the creature as yet, I only wish to point out that, as far as zoology takes us, there is no known creature which has the broad-tipped horns of the  .

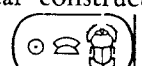
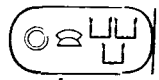
I now turn to the real subject of this paper. In treating of the royal names I take those of the early periods down to and including the Old Kingdom, using those of a later date for comparison only. In these I am concerned to show that the  is a noun, not a pronoun. The form is always masculine, *fw* or shortened to *f*.

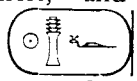
Early royal names fall into three categories: (1) A single noun, as Scorpion, Fish, Snake; (2) a participle,  *Aha* "He who fights," *Zeser* "He who is holy"; (3) a short sentence in the *sdm-f* form, i.e. a verb and subject, as  *Kha-sekhemui* "The two Powers appear." In no case is there a suffixed or even a dependent pronoun.

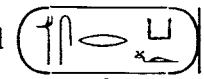
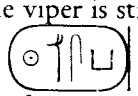
The earliest name in which  occurs is the last King of the IIIrd dynasty, usually known as Snefru. The name is spelt , , and ; all appear to be contemporary [*Note:* In Dahchour II, pp. 6, 13, the name is given as  ; here the , as written, can only be the phonetic complement; but both inscriptions appear to be hasty hand-copies. On p. 14 the name is given as  without]. The form  is generally taken as a scribe's error, but this can hardly be the case as does not take the double phonetic complement at this period,

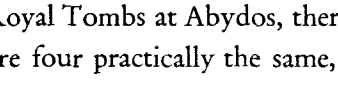
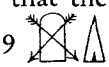
only the is written. If, however, the is a noun the name, whether written with or without it, would be in accordance with the customary forms, i.e. a participle alone, "He who is made happy," or a verb with a noun-subject, "The viper (*fw*) makes happy." The name is paralleled in the VIIIth dynasty, where a King is called  "The *Ka* makes happy," the noun *ka* replacing *fw*.

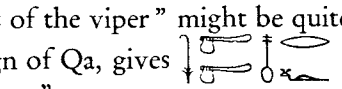
It is suggestive that the name of the immediate successor of Snefru (Snefer-fu) is Khu-fu. This is usually translated as though it read *Khu-f uy*, "He protects me," irrespective of the fact that the pronoun-subject has no antecedent, which is against the custom of all previous royal names. That the verb should be a participle used as adjectival predicate and the  a dependent pronoun is very problematical as a construction for a royal name, which at this early time is always extremely simple and straightforward. If  is taken as a noun, the name then falls into the same category as *Kha-Sekhemui*, i.e. a verb and its noun-subject, and would read "The viper (*fw*) protects." Parallel names are  , where as the name belongs to a private person the  cannot be a pronoun referring to a god's name implied; and  Khu-Sebek, which shows the same form with a god's name in place of . The group of names  , also give good sense when the is translated as a noun, "The viper of Ra (Horus, Khnum, or Khonsu) protects." It is noteworthy that in the Sinai inscriptions the form of the name is  .

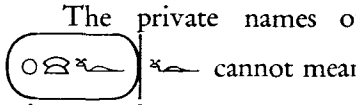
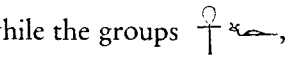
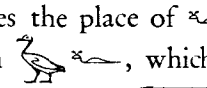
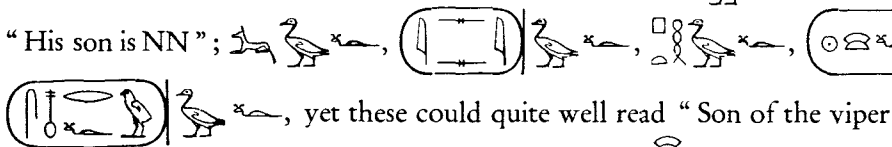
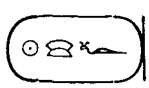
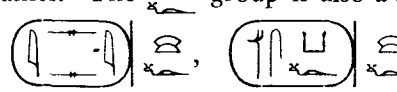
The position of the *F* in the name of Khafra is shown by the Greek transcription, Khephren; the usual translation of the name is "His appearance is Ra," or "His manifestation is that of Ra." This is hardly admissible; first, because it means nothing; secondly, because the grammar is too forced for a name at this early period; such a sentence would require the addition of the  of equivalence, or of (cp.). But taking as the noun, the sentence is translated "The viper of Ra appears," or "is manifest," which is not only a simple grammatical construction but has a definite meaning. Parallel royal names are of Senusert II  "The form of Ra is manifest," and of Senusert III  "The *Kas* of Ra are manifest."

 "The viper of Ra endures" of the IVth dynasty is paralleled by  "The *Ka* of Ra endures" of a rather later period, the noun *Ka* taking the place of the earlier , as in the Snefer-fu and Snefer-ka names.

Again, both  "The *Ka* of the viper is glorious," and  "The *Ka* of the viper is strong," are paralleled by  "The *Ka* of Ra is glorious" and  "The *Ka* of Ra is strong." In both names the form with Ra is later than the form with ; yet the noun Ra obviously replaces the . It seems hardly likely therefore that the *F* can be a pronoun, which in these cases could only refer to the King; and even at his most arrogant, the Pharaoh never actually equated himself with the God, whose son he claimed to be. If the pronoun referred to the King, the change to Ra would be inexplicable, and would involve an entirely different religious outlook from what is known to have existed.

Private names also give some interesting results. On the tomb steles from the Royal Tombs at Abydos, there are several names compounded with  , of which there are four practically the same,  . I suggest as a tentative rendering that the first two signs are the title, the last two the name " Gift of the viper " (cp. No. 9  " Gift of Neith "). I suggest also, though with some diffidence, that as  (Nos. 63 and 104) is the name of a woman, the is not a pronoun referring to the bearer of the name; but if it is read " The viper is satisfied," the name falls into the same category as the other God-hetep names.

Among the clay-seals, No. 7 gives  " The Horus, *Ka f* " as a name of King Zet. This can hardly mean " His *ka*," but "*Ka* of the viper " might be quite appropriate for the Snake-king. An ivory tablet of the reign of Qa, gives  " The King's axe-man," and as his name " Beautiful is the viper."

The private names of the Old Kingdom are perhaps more convincing.  cannot mean " He is Khafra," while the groups  ,  , which have no corresponding feminine forms with feminine pronouns, can be paralleled by forms in which a god's name takes the place of . Another group is compounded of a god's or king's name with  , which cannot read " His son is NN ";  , yet these could quite well read " Son of the viper of NN " and would then be parallel with other Son-names. The  group is also a large one, for besides the king  there are  ;  .

I suggest that these names show an early cult of a creature represented by the sign . It was not itself divine, in the Old Kingdom at any rate, but was closely allied with the Pharaoh and the dynastic gods. It probably belongs to the indigenous stratum of the population, to which the god Seth also belonged.

M. A. MURRAY.

REVIEWS.

Studies in Egyptian Chronology. By T. NICKLIN. Part I. 8vo, 74 pp., 1928 (Toulmin, Blackburn).

This work, though very full of suggestion, is entirely literary, and suffers from not being in touch with the contemporary monuments. The general principle here is to accept (with emendations) all the Manethonian dynasties, but to assume that there was great overlapping in the period between the XIIth and XVIIIth dynasties. Now it is useless to enter on details, if the results of such a treatment prove to be impossible. Can we ever suppose that any Egyptian kept a list of Palestine princes through all the smashing wars of Thothmes III and Sety I, and then foisted this in as a whole dynasty before the XVIIIth? The state of Palestine in those centuries makes this a hopeless supposition.

Another impossibility is supposing that the Egyptian history and Greek copies were kept in monumental script. They were on papyri, and the numerals must have been in the regular hieratic forms and in the Greek alphabetic numerals. All the emendations based on the cumbrous monumental script are beside the mark. A supposed proof is given where 39 and 31 are confounded; but in cursive Greek the big loop in front of *alpha* is much like *theta*, and a slight wear at the top would cause them to be interchanged in reading. We must think in cursive script if emendations are tried. Further evidence bearing on the problem has come to light this year. A long series of Hyksos tombs are found, of a debased and late style, and the pottery and scarabs of this series are entirely different from the pottery and scarabs of the neighbouring tombs of the XVIIIth and XIXth dynasties. The Hyksos age cannot have been contemporary with those dynasties.

After stating these facts, it seems needless to see in detail how the results in this book were produced. But one matter is so generally important that it should be noticed. Overlapping of periods is assumed to have been adopted by Manetho, on the ground of similar examples in other countries. Yet the fact is that, where we can test his work, we find him scrupulous to avoid overlapping. His Xth dynasty is carried to its close, and only a quarter of the known history of the XIth is allowed to follow it, as the rest was overlapped. The reign of Taharqa is cut short, because the rise of the XXVIth dynasty overlapped the rest of it. Further, the totals of the books agree with the whole length of the dynasties while, owing to petty corruption, these totals cannot have been remade later in all the three versions.

Whatever the original facts may have been, the mode of dealing with the Turin Papyrus and Manetho is impossible. To take a parallel supposition. Can we imagine any one in our day agreeing that George I lived in the Roman period, and filling up the time between with lists of colonial and Indian governors? The family traditions and

documents would make such an imposture incredible. So could any Egyptian in the XVIIIth dynasty tolerate the XIIth dynasty being put 1,700 years before him if it was only 200 years before? The interval must have been several centuries for the history to have been stretched out to 1,700 years without being detected. Some other solution must be found for the discrepancy between Manetho and the apparent results in other countries. The end is not yet.

The Sumerians. By C. LEONARD WOOLLEY. 8vo, 198 pp., 29 pls. (Oxford), 1928. 6*s.*

The change in our outlook in history since 1900 has been as great as the change in science. As last century ended, it was a common remark that we had gone so far that only details were left for us to elaborate. In science the whole structure of the atom, wireless, and the internal combustion engine, have changed our outlook as much as all the previous inventions of man. In history we thought we had reached the beginnings, when suddenly all our foundations gave way; in prehistoric Europe we realised that all we knew were but the spillings of bigger Asiatic cultures, Egypt provided two more civilisations before those we then knew, India produced a great pre-Aryan civilisation as old as that of any other land, and Iraq has furnished a glorious period of fine work among the Sumerian people, and shown that they had anticipated the best that later ages could execute.

In this volume there is an outline of this early age, tracing its conditions, its history, the social life, the public works, and an estimate of its effect on the history of the world. It would be out of place to attempt any criticism of so well-balanced a summary, and this will give the public the readable material to fit in to its general appreciation of the past. After being usually repelled hitherto by long arguments about the rendering of Sumerian names, it will be a relief to deal with the human facts without reference to the details of writing or reading. The most striking of the magnificent objects that Mr. Woolley has found are here well illustrated, beside some of the things already known. The production of such accounts as this, and those of Dr. MacIver, is doing an essential service in public education.

The last chapter touching on other countries may be open to remark. We are told of "the history and the art of a race which died out nearly four thousand years ago," but certainly the activities of the race long continued; in the Vth century B.C. the Sumerian was the great international trader, as testify the portrait heads found in Memphis, more numerous there than those of any other people. The "Babylonian merchant" was not the Semite but the Sumerian, true to his business instincts which founded modern commerce. Another dictum may be reconsidered, for there is no proved synchronism between Egypt and Babylonia before 1500 B.C. We need much more direct information before we can safely handle the difficulties of the chronology.

A Century of Exploration at Nineveh. By R. CAMPBELL THOMPSON and R.W. HUTCHINSON. 8vo, 146 pp., 9 pls. (Luzac), 1929. 7*s.* 6*d.*

This book gives a collective view of the excavations and natural interests at Nineveh, the most effective plea for further work there. The record of fragmentary attempts, miserably financed, should make this country ashamed. Even on a capital site such as this, there has never been any systematic clearance worthy of its importance. The public indifference to historical research has pervaded and spoilt all our opportunities. By this time the glamour of Nineveh is like that of the kings of Rome;—a fascinatingly

distant view in our youth, which has suffered now by the greater interest of far more remote times. When we reach a familiarity with the early pre-historic period, Romulus and Menes seem too well known to stir our pulses.

The account of the early explorations, from Rich in 1820 onwards, is a record of the public exploiting of enthusiastic workers, who were always short of means and often in political difficulty. As this has been the same case in Egypt, Palestine, and elsewhere, the record is typical of public indifference, as guaged by public support. Half of the book is occupied with the account of excavations, by Layard, Rassam, George Smith, King, and the authors; a quarter is given to the modern state of the land, and a quarter to an outline of the history of the capital. The natives seem to be lower than the Palestine Bedawy or the Egyptian, in working power; they begin an hour after sunrise and stop an hour and a half before sunset, while the western work goes from sunrise to sunset without any difficulty. The wages seem to be much the same in both regions. By 1903, modern methods hardly reached work in Babylonia, as we read of slabs cracked by fire having to be reburied as hopeless. Now-a-days we should paraffin them and bring them away in sound condition. The interest of sculptures in the early days and, later, of tablets, has obscured the archaeology in all other directions, and great opportunities have been lost, as when Layard left behind ninety camel loads of steel picks, to be used up as metal by the Arabs. Boscawen said of excavators, " they dig for tablets like potatoes." Happily Dr. Campbell Thompson has an archaeological conscience, and it is to be hoped that he will get support for further work on this great historical site which he has so attractively described in this excellent outline.

JOURNALS.

Annales du Service des Antiquités. Tome XXVII.

GAUTHIER, H.—*Tombe d'époque Saïte à Heliopolis.* Beneath the village of Matarieh three stone-built tombs were found, one inscribed. This is for Uahabra " exalted," son of Hornekht and Thes-bast-peru. The term exalted, *thest,* is taken here as " porter," yet passages are quoted where it is used for " exalt." The title *thesi semsem* (No. 1432) clearly means a person exalted over the horses. Titles precede the personal name, so this term here is not a title. It seems to be a compound name, Exalting-Uahabra. Beside marginal texts, there is a large list of 60 offerings. The canopic jars have brief inscriptions (material not stated); the ushabtis are small with a short vertical name on the back. Many small amulets were found detached, some of which are figured as foundation deposits, though there is no hint of having reached a foundation; probably they are all amulets, and models of funerary vases in the style of the VIth dynasty.

LEFEBVRE, G.—*Stèle de l'an V de Méneptah.* This was found near Menuf (S.W. Delta) though wrongly published as of Athribis. For ten years it was neglected, then it was moved, and lost in a canal; now after thirty-five years it has been brought up to the Museum. It is of red granite, $11\frac{1}{2}$ ft. high, and was 5 ft. wide, but nearly half the width has been lost. The neglect it has suffered has defaced it still more, since Maspero took an impression in 1882. It is inscribed on both sides: on one a hymn of triumph, on the other a recital of the numbers of slain of different western tribes, and of spoil taken.

EDGAR, C. C.—*Greek epitaph from Saqqarah.* Twelve lines " are packed with vague epithets " about Heras of Memphis, in guise of a conversation with the lion on the monument; the last four lines address the dead man.

GAILLARD, C.—*Animaux consacrés à la divinité de l'ancienne Lycopolis.* After describing the types, the Director of the Lyon Museum concludes that the animals preserved were a cross of the common dog and the small jackal. He declares that there is not in Egypt any proper wolf, nor black jackal, nor red fox.

CAPART, J.—*Fouille dans la nécropole de Héou.* A decorated stone tomb of one Pa-tahuti had been broken up by the natives, and only fragments were recovered. A scarab of Amti-sat, who was *uket* of the prince, was found near a pit in which were some remains of funeral models.

JÉQUIER, G.—*Fouilles ... de la nécropole Memphite.* This work was around the Mastabat-el-Faraoun. Small tombs of the latter part of the VIth dynasty were cleared; these show (as at Denderah) the disappearance of sculptured chambers, and, furthermore,

no trace of inscription outside. There are only blocks of brickwork, with one or two niches in the side, and a rough table of offerings at the niche. One good painted chamber is illustrated, that of Shay. The lower temple of Pepy II has been almost annihilated by the village near it; a few pieces of figures of foreigners, and a sphinx trampling on enemies, are all that remain. The avenue is almost all destroyed, some fragments of bearers of offerings from the nomes were found. The upper temple by the pyramid is fairly preserved; it is of the same type as those of the Vth dynasty. On one side is a small pyramid, without any shrine, and too small to receive anything but a coffin. As similar small pyramids occur near kings' pyramids, without any evidence of burial or funeral service, it is suggested that they served a special purpose in relation to the king. All along the avenue were found fragments of statues of buried enemies. In the ante-chamber was an infantile figure in alabaster, seated on the ground, wearing the uraeus, like an alabaster head in University College. Statuettes of officials belonging to the temple service, as late as the XIIth dynasty, were placed in the temple, which remained visible till the New Kingdom.

SAINT-PAUL GIRARD, L.—*Fragment de liturgie magique Copte.* This is a curious mixture of Gnostic and Christian invocation.

LUCAS, A.—*Necklace of Queen Aahhetep.* This examination corrects the previous accounts about the materials. The red stone is carnelian, as all agree. The blue inlay is mostly lazuli, but some pieces show a conchoidal fracture which suggests glass. The small centres of the rosettes are all turquoise, some blue, some green. In the long pendants the blue is artificial with a vitreous glaze much decomposed. The circular pendants have a white centre, which are probably button pearls, cut away from the shell, but not true detached pearls.

ENGELBACH, R.—*An architect's project from Thebes.* This was a sketch-plan of a chamber, 18×15 cubits, with four pillars; the pillars were to be $1\frac{1}{2} \times 2$ cubits each, and there are tentative divisions of the spacing shown by the marks.

WAINWRIGHT, G. A.—*El-Hibeh and Esh Shurafa.* The importance of these two frontier forts of the XXIst dynasty is described. It is supposed that the defence was needed against the west rather than the north; but as the positions are neither of them opposite Herakleopolis, the proposal of that city being the centre of attack seems insufficient; the position of the boundary between Middle Egypt and the Thebaid at different periods is quoted, and the sign of Cusae—a man holding the necks of two animals—is taken as referring to the frontier controlling both north and south. This leads to the proposal that the two long-necked leopards intertwined on a slate palette, record the union of both Egypts by Mena. Similar groups are quoted from Babylonia.

FIRTH, C. M.—*Excavations at Saqqara.* This article describes the chambers beneath the south wall of the temenos around the Step Pyramid. The various chambers found are described, but without any plan. The row of three recesses with very low relief figures of Zeser are astonishingly perfect. The order of the three figures is the same as those of Semerkhet in the Ist dynasty—the white-crowned, the red-crowned, and the white-crowned king in action. The work is very refined, yet vigorous in detail. The face of the king has much of the Sudany type of Sa-nekht, but the nose is less thick, an improvement due to two generations in Egypt. All the blue glazed tiles appear to have

been carefully removed from the limestone wall, presumably when these chambers were abandoned for the royal burial, and the tiles used elsewhere. One doorway with *zed* signs over it confirms the origin of the form being a bundle of reeds; but Mr. Firth takes the four tops as being due to four steps in the bundling, in order to obtain a longer column, and not to a combination of the four pillars which supported the heavens. Beside this there was a chamber with twenty great alabaster jars about 3 ft. high; also a magazine with a gold-plated canopy like that of Hetep-heres; and there is still an unsearched pit which led to a sepulchre. Why all this was abandoned is only conjectured; it may be that the soil around was unsuited for the mass of a pyramid, and hence the Step Pyramid was built farther north.

We still await some detail of the set of chambers discovered by a passage on the east of the Step Pyramid, which have been briefly reported in public. These have similarly delicate low relief figures, which were later ruled up in squares for copying, and were, therefore, well known.

LAUER, J.-P.—*Quelques Monuments de la IIIe dynastie.* This paper gives a careful reconstruction, by a competent architect, of the chapels, walls, and colonnades around the Step Pyramid. The chapels had the old house-tomb form found in the Ist dynasty (*Tarkhan* I, XXVIII), with rounded top, bounded by two rectangular block ends; but the chapels retain the columns at the end, which recalls an open end like the festal tents of the present day. The heights of the columns have been carefully worked out from the upward contraction, and agree very nearly with the highest part of the existing building, about 28 ft. The drawings of restoration seem fully justified by the remains and by later models, without any fanciful detail.

CHEVRIER, H.—*Travaux de Karnak,* 1926–27. The gradual extraction of the fine work of the XVIIIth dynasty is continued, from the use of it as mere filling for the coarser building of the XIXth. The immense blocks of alabaster, one of 86 tons of Amenhetep II, the other of 46 tons of Tehutmes IV, were very difficult to move for fear of endangering the obelisks by pressure on the soil, and owing to the surrounding monuments. The continued clearing out of the IIIrd pylon becomes more difficult; as the blocks are closer packed, the walls need staying when the filling is removed; the blocks of Hatshepsut are also beneath the walls, and the central stairway hinders the clearance. The west wall is almost entirely based on blocks of Hatshepsut. In short, two Karnaks are in view; that of the XIXth dynasty, which needs to be taken down and rebuilt, in order to extract the Karnak of the better and earlier date, which will need to be built up again on different ground.

The Akhenaten building has been developed with at least eighteen Osiride pillars on one side of the court—double the number known in any other temple. However much the work caricatures the king, it attracts spoilers, for one afternoon a colossal head was carried off during the siesta, but was afterwards recovered by the police.

The temple of Khensu has been searched, and is full of re-used blocks of Hatshepsut and others, in the foundations. The walls are also of re-worked blocks, so that "one may demand if Rameses III made use of a single block really new." The destruction wrought by the XIXth dynasty is coming home upon them, and most of their works will be taken to pieces to recover the fine things they used up.

In the Hypostyle Hall the foundations prove to be very irregularly designed. In the course of clearing under three columns for new foundations there were obtained a

stele of Sebekhetep IV, a great quantity of carnelian beads (most of which were stolen by the workmen owing to not giving bakhshish), three large blocks of Senusert I of fine work and condition, many blocks of Akhenaten, and a head of a late statue. The column of Taharqa had been taken down, and rebuilt on solid foundation.

SPIEGELBERG, W.—*Altägyptische gefaltete (plissierte) Leinwandstoffe.* A garment found at Meir, of the XIth dynasty, is in the Cairo Museum. It is of ribbed weaving, like some pieces of the VIth dynasty (*Deshasheh,* p. 32). See also p. 241.

DARESSY, G.—*Trace d'une voûte de la III^e dynastie.* The curve for a rounded top of a wall is drawn on a limestone flake, with the length of five offsets stated.

DARESSY, G.—*Ostraca de Biban el Molouk.* These illustrate the affairs of the tomb sculptors in the XIXth dynasty, but do not add any fresh fact in the royal history.

ČERNÝ, J.—*Ostraca hiératiques inédits de Thèbes.* The first is a day-book of the attendance of workmen, of whom fourteen are named for the right side, and twenty-one for the left side of the tomb. The work was for some king of the XIXth dynasty after Sety II, probably Siptah. The second ostrakon describes a trial for slander against the king, entirely settled by the corporation of tomb-workers. Lastly there is part of a list of rations for the tomb-cutters.

GUNN, B.—*Stela of Apries at Mitrahina.* This was rescued and set up by Major Bagnold, and published more than once. It is here translated and analysed line by line. It recites the decree of the dedication of all adjacent land to Ptah. It is composed with careful, but not faultless, archaism, by a Chatterton of that age.

LAKE, K.—*The Serabit Inscriptions.* A brief statement about the removal of the foreign inscriptions.

Syria. IX, 2, 3.

DU MESNIL DU BUISSON.—*L'ancienne Qatna.* This article continues the account of work in 1927. The tell proves to be a rocky mass, scarped as a glacis of defence, varying as 63^0 or 50^0 according to photographs. This has been later faced by a brick wall, much as the Hyksos fortress of Yehudiyeh had a stone wall in front of the stucco glacis. It seems that the later Hyksos became converted to wall defence here, in place of a glacis. There are very few objects recorded or figured; two scarabs are of Syrian work influenced by Egypt.

VIROLLEAUD, C.—*Les tablettes cunéiformes de Mishrifé-Katna.* These tablets refer to the property in the temple of Nin-egal. The most striking object was a great bull's head of silver weighing 90 minas, probably akin to the bull's head from Crete and that figured in the tomb of Senmut. The objects of *marhashe* are translated " marcassite ": this raises the question of the origin of the Latin name marcassite. At first sight, this name for the pale (rhombic) pyrites, in contrast to the deeper coloured mundic (cubic) pyrites, might well come from *marcesco* to languish, or be feeble: but now it seems that it has an oriental origin, like gypsum and many other mineral names.

PARROT, A.—*Fouilles de Baalbek.* Fragments of a great column and sculpture in a position marked on Wood's plan.

CUMONT, F.—*L'autel palmyrénien du Musée du Capitole.* A discussion of the meaning of the sculptures of solar nature.

POIDEBARD, A.—*Milliare provenant de 'Amouda.* Of Caracalla.

POIDEBARD, A.—*Reconnaissance aérienne au Ledja et au Safa.* This air survey was over the region south-east of Damascus. The four air plans show the Roman roads and ancient sites excellently. A great volcano is in this region, and much of it is covered with flows of basalt, which greatly obstructed road-making.

MALLON, A.—*Une nouvelle stèle égyptienne de Beisan.* This is the stele of Mekal, already reported in this Journal, 1928, p. 63.

DUSSAUD, R.—*Observations sur la céramique du 11^e^ millénaire.* This is an important paper as dealing with the decorated pottery of Hyksos and Philistine ages. First is discussed the tomb I of Katna, concluding that it was before the destruction of the city by the Hittites in 1375. Next is a summary of Macalister's classification at Gezer, which is here accepted. Lastly the incised or prick-pottery of Yehudiyeh is considered. All the sites of this ware are quoted, and M. Dussaud concludes that this pottery is Canaanite, without deciding in favour of Syria or Cyprus as the place of manufacture.

DUNAND, M.—*La sixième campagne des fouilles de Byblos.* In the sanctuary a "stone" basin was found sunk in the pavement, 5 ft. across. It is considered to be the "sea" for he water used in sacrifices. In the foundations of a wall, a relief was found with a figure of a prince of Byblos adoring Ra; the name was effaced, but M. Montet attributes it to the XIVth dynasty. In deep excavation a mass of Egyptian offerings was found, dating as far back as Khosekhemui of the IInd dynasty; a vase of that king has long been in the Beyrut museum unrecognized. A large cylinder of lazuli is not described correctly; it bears a seated deity with a worshipper before and behind, bowing, and also the mummified hawk of Sokar on a stand, with long drapery. The legs and claws of the bird clearly show the nature of the mass. Some bases of columns, found almost on the native rock, seem to belong to the most primitive sanctuary. A further deep clearance has been made through 39 ft. of ruins; about 7 ft. is occupied with pottery of the Old Kingdom, of very varied forms and colours; there is also a great variety of pottery of the Middle Kingdom, and the New Kingdom is marked by a third kind of pottery. No figures are given of any of these.

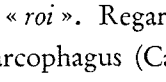
ABEL, M. et BARROIS, A.—*Fouilles ... à Neirab.* This work near Aleppo, on a large cemetery, has produced pottery and amulets of about 1200 to 600 B.C., but nothing that seems of importance.

PIQUET-PELLORCE et MOUTERDE, R.—*Magarataricha.* Describes a site of rock tombs of the Greek and Roman periods in North Syria.

POIDEBARD, A.—*Mission archéologique en Haute-Djezireh.* This expedition traced Roman roads and some fine camps between Circesium and Nisibis, of which good air photographs are given.

Other papers are on Shiite shrines and on Armenian dragon designs.

Revue de l'Égypte ancienne. II, 1–2.

CHASSINAT, E.—*Le mot seten, « roi ».* Regarding the form recently adopted, an important instance is quoted of a sarcophagus (Cairo 28121) which reads  . The usual *hati* title with the bee never has *n* with it, and so the *n* cannot be an adjunct to the *sut*. [This apparently implies that it is part of the radical.] The late sign of the baboon seated holding the *uzat* eye is debated, but without any result on the form of the word *seten*. The examples of the  and are quoted to show that they appear equivalent. Such seem the essential conclusions of nineteen pages full of examples.

DARESSY, G.—*Menelaïs.* In this paper, M. Daressy continues his studies of the Delta geography. The Canopic region is one of the least known, owing to the submersion of the low coast and its inaccessibility. The main authority discussed is the statement of Herodotos that the way in the inundation was across the plain from Canopus to Naukratis, passing Arch-andro-polis. This name is well represented by the name *sma-su* the elder or chief man, which was the name of the high priest of the VIIth nome, in which a town was the Ha-sma-su. In the trilingual list Menelaitou = Thbashor, which means the female jackal, in Greek Lukaina, and this name is preserved in Tell Luqin. The position just south of Schedia, now Kariun, agrees well with the requirements. Various less decisive sources on the geography all agree with this position, such as Peutinger's map and the crusading itineraries.

Damanhur as a name had disappeared, but was revived to unify a group of five villages, by the Coptic clerks in the time of Bonaparte. Other sites in Egypt of that name are noted.

The valuable maps here give the contours of the sea bed about the Canopic mouth. The changes of level were probably at the times of great earthquakes, and so stated in 952, while in 1033 and 1202 other severe shocks occurred.

CAVAIGNAC, E.—*La date du tombeau de Pétosiris.* In the time of Petosiris the harvest was in the season of *ăkhet*, and as the harvest about the region of Hermopolis is in April (rather than March), this gives a seasonal date. [The end of *ăkhet* falls on April 1 in 430 B.C.] Hence, it is argued, the tomb cannot be as late as 300 B.C., and the period of destruction under evil *nesutiu*, and repair under *hequ*, should be assigned to the time of Darius II down to 405 and native rulers after that; or else to the time of Cambyses down to 521 and the enlightened Darius I after that. Montet would prefer 460 B.C. for the tomb, but Cavaignac takes 406–397. [All this is on the assumption that the sculptor was strictly following the actual season; but he may have been copying some previous design of a century earlier. If so, the *nesutiu* would be the destructive Persians after the XXXth dynasty (342–332 B.C.), and the *hequ* would be the Macedonian governors. It is also possible that the harvest referred to was of barley, which is earlier than that of wheat.]

MUNIER, H. and PILLET.—*Édifices chrétiens de Karnak.* This describes the planting of three churches amid the temples, dedicated to Apa Stephanos, St. Sergios, and Papnoutios, in the VIIIth century, which were abandoned in the XIIIth. They were in the temple of Khonsu, that of Amenhetep II, and the festal hall of Tehutmes III. There were also convents against the great west pylon, the Hatshepsut pylon and the Heremheb pylon. Many graffiti are also noted.

MALLON, A.—*Nouvelle série d'ostraka* ΕΤΜΟΥΛΟΙΙ. These are considered to be the earliest Coptic ostraka, of about 600 A.D. The word occurs after receipts for goods, rendered as "complete," or "exactly." May this have been put on at the end to prevent the addition of any further item?

WEILL, R.—*Le roi Neterkhet-Zeser et l'officier Imhotep.* This paper sets out all the variants of titles of the king, and then discusses the inscription on the base of his statue from Saqqarah. This base has, in large signs in the middle, *bati senui* facing *Hor Neter-khet*, and on one side of this the titles of the vezier Imhotep in much smaller signs. The *senui* has been taken as a name of Zeser, but M. Weill proposes that it is a title of Imhotep. [The equality of the size with that of the king's name, and the central position before the statue, seems to preclude such a supposition.]

We must welcome the first number of the Journal of the Czechoslovak Oriental Institute, Prague, edited by Professor Hrozný (agent, Geuthner, Paris), to be issued thrice yearly for 12*s.* or 75*fr.* The articles are in English, French, and German. The Oriental Institute has been founded by the endowment from the President of the Czechoslovak Republic, Professor Masaryk, on his seventieth birthday.

Archiv Orientální. I, 1.

MUSIL, A.—*Personal qualities according to the Rwala Bedouins.* The poetry of this tribe has been collected and is here translated, showing in its expressions the ideals of the people, full of the spirit of the desert.

LEXA, F.—*L'analyse littéraire de l'enseignement d'Amenemopet.* This is a complete translation, followed by analysis of the structure in detail. The author refers to the translation of Prof. Lange, but does not seem to know that of Prof. Griffith (*J.E.A.* 1926, 191), as some readings, which have by now been cleared up, are still misunderstood in this version. In a few cases, there is a turn which seems happier than the Oxford version; in I, 17 "who inscribed islands and new lands" becomes "disposing of the islands recently emerged," i.e. allotting fresh shoals in the Nile. In XVII, 17, speaking of a capacity measure "do not the injustice of (?) Wbn nakht (?)" becomes "do not do injustice in over-filling it." In XVII, 19, 4–7. "Do not receive harvest due from a farmer, and then (?) tie up (?) a document against him, that he may be injured; conspire not with the corn-measurer, nor play the game of 'Arranging the Interior.'" M. Lexa renders this "Do not receive the crop from a peasant (corruptly), and do not write him a receipt when he has committed a fraud. Do not associate with the measurer, nor violate the orders of the royal palace." These renderings seem to seize an apposite sense, and it will be well to take count of M. Lexa's work.

PERTOLD, O.—*Foreign Demons.* This is a study of Sinhalese demon-worship, which overlays the popular religion of Ceylon, like the folk-beliefs in Europe. The demon-masks used in mystery-plays are well known, but the origins are difficult to trace. The demons are mostly said to be of foreign source, and these are divided here into those from foreign mythology and others from various cultural influences.

HROZNÝ, B.—*Naram-sin et ses ennemis d'après un texte hittite.* This list of seventeen kings who were leagued against Naram-sin, appears to be an early and historical record which underlies a more literary and legendary form known in Neo-Assyrian. In it appears Pamba the earliest Hittite king known, the king of Amurri, and places to the east and north of Babylonia.

WESSELSKI, A.—*Einstige Brücken zwischen Orient und Okzident.* This deals with folktales of the middle ages traced through Sicily, India, China, and elsewhere.

Notes: HROZNÝ, B.—*Ein babylonisch-hethitisches Omen.* WINTERNITZ, M.—*Ein neues Buddhismus-Institut.*

Reviews, on Indogermanic nature of Etruscan, and on an early Sinhalese work.

NOTES AND NEWS.

THE splendid tombs which Mr. Woolley has been finding at Ur, he now describes as having been entirely cut into a far older rubbish heap of the town. Working down in this earlier deposit, he has found inscribed tablets of very primitive character, and beneath all was clean solid clay, apparently the basal level. For 8 ft. thickness this continued, bare of all human remains; but below it appeared another civilisation, using flint work, pottery, some of it painted and, at the bottom of all, burnt bricks of a type as yet unknown. At last the real undisturbed ground was reached a few feet above sea level. In three different places this same thick bed of clay was found, so there must have been a long break in the occupation of the plain, during which it was under water, flooded by the muddy streams. This is like the silt deposit at Gerar, which had buried Roman pottery at various levels 50 ft. apart, and yet all deposited within a few centuries. Such a submersion of the country in Iraq gives an historical basis for the Babylonian record of a general flood.

British School of Egyptian Archaeology. The annual exhibition, with the scarabs of the Shepherd Kings and painted Philistine pottery, will be held at University College, Gower Street, from the 8th to the 27th of July. No postal notices will be sent out this year, and the public is asked to remember that the exhibition is always held in July, and to tell all friends who may be interested.

Erratum in last number of this Journal, p. 126. Mr. Dows Dunham the American excavator is Assistant Curator in the Museum of Fine Arts, Boston, Mass.

In the previous number, 1928, p. 73 is on scale 1:4, and pp. 77, 78, 79, 81 on scale 1:6.

THE AGE OF EGYPT.

THE question of the age of Egyptian civilisation has a decisive voice in settling the whole scale of western history. It is therefore one of the subjects which most urgently need adjustment. Unfortunately the usual course is to defer to some opinion without trying to understand the matter, and very few students have even a hazy idea of the elements of the subject, or know what monuments define it. It has even become a mark of orthodoxy to ignore inconvenient facts, which must not be allowed to trouble polite studies. Lately some fresh information has come to light, so it will be well to give a short outline of the materials for study, and of the various proposals which have been made for co-ordination.

The reckoning of time was as diverse among the Egyptians as among ourselves. We have three modes of reckoning, and sometimes a fourth. There is the day defined by a single rotation of the earth, or the sidereal day used by astronomers, of 366·256 in the year. As one rotation is neutralized by the revolution round the sun, there are 365·256 solar days in the year, the count of "Old Style," called by astronomers the Julian day and Julian year. But as the earth's pole wobbles round in the sky once in twenty-five thousand years, —the so-called processional motion—the year of the seasons, or Gregorian, or legal year of "New Style," contains 365·242 solar days. Beside these years the lunar year, which was probably the first reckoning of man, is of 354·367 days in twelve moons, but is now unnoticed owing to electric light generally superseding moonlight. It remains in use in Islam, and entails the great fast of Ramadan shifting through all the seasons.

The Egyptian had four several years with separate festivals, as named on the tomb of Khnumhetep (*Beni Hasan* I, pls. xxiv, xxv). These were the "head of the year," "the opening of the year" otherwise "the coming forth of Sothis," "the great year," and "the little year." The allotment of these names is not absolutely certain, but we can see that there must have been (1) the normal year of 12 months of 30 days and 5 additional, counting probably from mid-winter: (2) the Sirius or Sothis year, from near mid-summer: (3) the long year or seasonal year of 365·25 days: and (4) the short lunar year of 354·367 days. The year of 365 days, by the lack of leap year, was carried back through the months in 1460 years; the seasonal year avoided this by adding the quarter of a day, and the seasons were named from natural conditions, Dec. to April, "growth months," April to August "house months," and August to December "inundation months." The months of the lunar year must have moved round the seasons in 32 years like the Arab months. It is obvious that dates will be very different according to the various calendars, and it is essential to discriminate which calendar will agree with the actual record of facts.

The principal materials that define the chronology are (A) astronomical, such as the changes due to the omitted leap year, or to the seasonal change of Sirius, or to lunar reckoning: (B) Monuments stating lengths of reigns or other intervals: (C) Seasonal dates of events recorded in terms of a changing year: (D) Material evidence of objects: (E) History transmitted by authors and copyists.

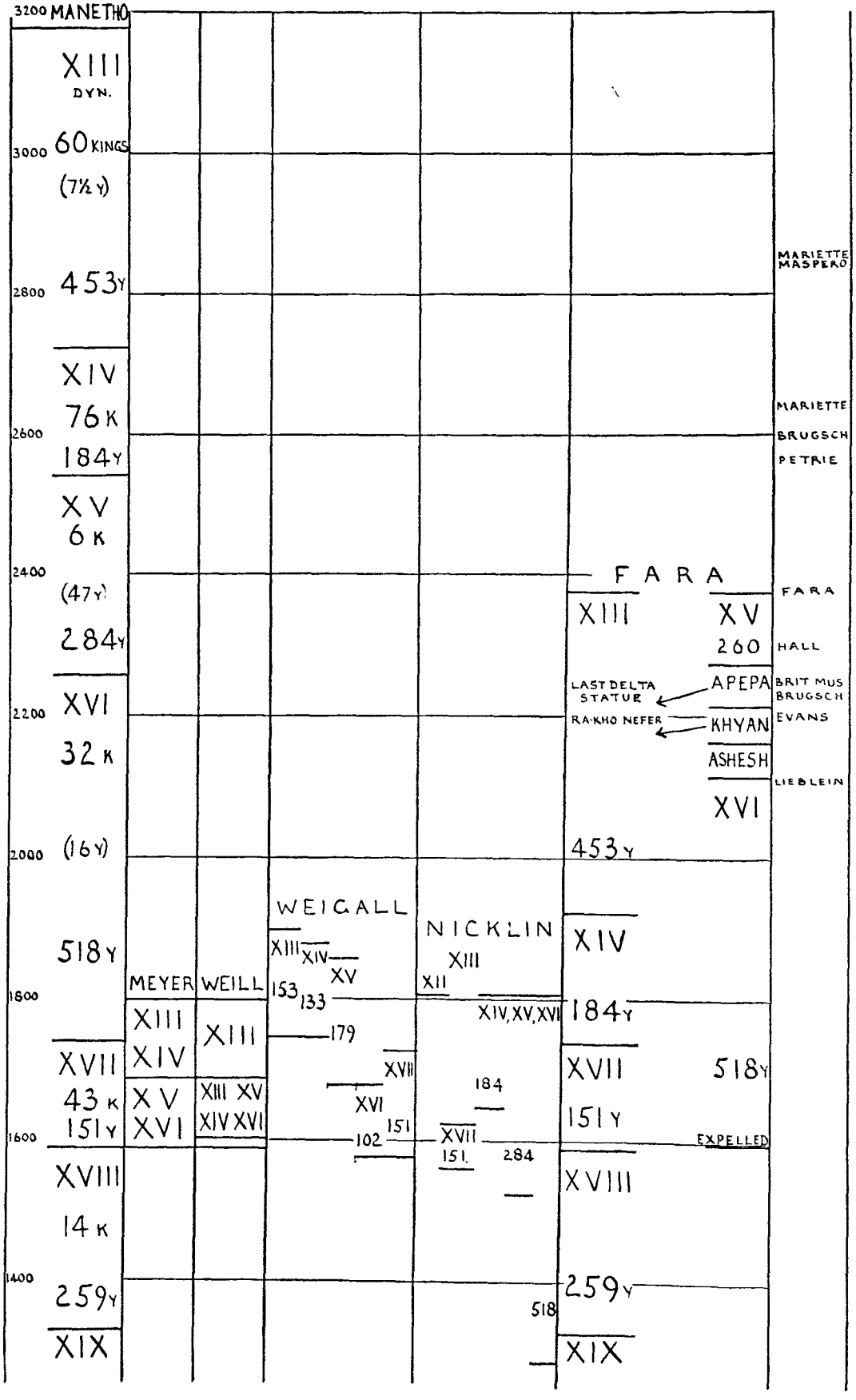
At first Egyptologists, from Champollion onward, based their history upon the transmission by copyists of the history of Manetho; that writer had great opportunities of collecting material, and was of good education and repute. The vague whole-length statements of Herodotos showed that Manetho's general scale was accepted in the vth century B.C., and the fragments of the chronological papyrus of Turin down to the xivth dynasty showed that such was also the history of that age in 1500 B.C. Thus about 5600 B.C. was accepted for the beginning of the 1st dynasty.

Some eighty years ago, in the fervour of critical discoveries, an idea arose of disbelieving every statement of which no evidence had yet been found. Homer and the kings of Rome fared badly and, for Egypt, Bunsen cut down the 1st dynasty to 3600 B.C., Lepsius and Lieblein to 3900. An essential change in the position came in 1899 when a dating of the rise of Sirius on the 17th of Phamenoth (the 197th day of the year, or 227th if starting from Mesore) was found recorded in the 7th year of Senusert III of the xiith dynasty. This was assumed to be on the basis of a year of 365 days, and therefore would show the xiith dynasty to have been from 3459 to 3246, or else from 1999 to 1756 B.C., thus leaving only two centuries for the xiiith to xviith dynasties. The earlier dating is too distant to agree with remains in other lands, the later dating is quite incompatible with Egyptian records. The latter, however, has been accepted by the Berlin school, and it is curious how the monuments between the xiith and xviiith dynasties are ignored in order to favour this view; it is even thought by some to be improper to refer to them. The only way to avoid the length of the history as stated by Manetho, and summed up at the end of the three sections of his work, is to suppose that some of his dynasties were really overlapping, and thus double-reckoned. Various schemes of such shortening have been proposed.

The historic material which has to be considered is as follows:—

	Manetho by Africanus			Turin papyrus		Manetho by Josephus		
Dyn.	kings	years	av.	kings	av.			
xiii	60	453	7·5	53	8·2			
xiv	76	184	2·4	87				
xv	6	284	47·3			6	260	43·5
xvi	32	518	16·2					
xvii	43	151	3·5					

Now we must turn to see how various writers have treated the situation. As these records do not agree with the conclusions of Berlin, Meyer states in 1904 that "these numbers are historically absolutely worthless." Further in 1909 he quotes the Egyptian statements, but concludes "That is to us an absurd exaggeration, because as a matter of fact we know from the Sothis datum that the interval does not amount to more than about 210 years."


3200
MANETHO
XIII
DYN.
3000
60 KINGS
(7½ Y)
453Y
2800
XIV
76 K
2600
184Y
XV
6 K
2400
(47Y)
284Y
XVI
32 K
2200
(16Y)
2000
518Y
XVII
43 K
151Y
1800
1600
XVIII
14 K
259Y
1400
XIX
MEYER
XIII
XIV
XV
XVI
WEILL
XIII
XIII XV
XIV XVI
WEIGALL
XIII XIV
XV
153 133
179
XVII
XVI
151
102
NICKLIN
XIII
XII
XIV, XV, XVI
184
XVII
151
284
518
FARA
XIII
XV
260
APEPA
KHYAN
ASHESH
XVI
LAST DELTA STATUE
RA-KHO NEFER
453Y
XIV
184Y
XVII
151Y
518Y
EXPELLED
XVIII
259Y
XIX
MARIETTE MASPERO
MARIETTE
BRUGSCH
PETRIE
FARA
HALL
BRIT MUS
BRUGSCH
EVANS
LIEBLEIN

Accordingly he proceeds by entirely ignoring the Egyptian statements in his conclusions, and not making any proposal to fit the monumental facts into his assumed framework of 210 years; he only states that the Hyksos were in the Nile valley for a century from 1680 to 1580 B.C., places king Ay at 1710, and so brings in the Hyksos at the middle of the xiiith dynasty. This treatment would ignore the close link of style between the xiith dynasty and the Hyksos, as well as all the historical statements which are left to us by the Egyptians.

Raymond Weill in *La fin du Moyen Empire Égyptien* (1918) has described many monuments of the period, in a work of 971 pp. He declares the accounts of the Hyksos to be literary exercises on the "theme of disorder." By throwing over the dynastic list of Manetho, the general statements of the total history, the list of Hyksos kings in Josephus and the recorded reigns in the Turin papyrus, he breaks up the recorded names of kings into many small groups which he rearranges on the following scheme (p. 819):

11 kings	20 years	
xiiith dynasty	90	
xiiith and xivth dynasties	85	xv / xvi
xviith dynasty	15	
	210 years	

Two of his guiding theories are (A) that kings having the same type of name formed compact groups, and (B) that a type of scarab which he reads *Anra* is a definite group. Regarding (A) it is enough to see that the xviiith dynasty has many types of kings' names recurring in it without any order, as Ra-neb-, Ra-oa-, Ra-zeser-, Ra-men-, Ra-kheper-; if these were rearranged according to the groups of name-type, history would be destroyed. Regarding (B), the reading of the epithet should be *rda-n-ra*, = Heliodoros, and as Weill states that it is found from the xiiith to the xviiith dynasties, it cannot be of any precise value.

A more rational view was taken by Arthur Weigall in *A history of the Pharaohs* II (1927). He begins by claiming that during the interval there was a change by New Year beginning on 1 Mesore instead of 1 Thoth, thus gaining 120 years for the duration of the xiiith–xviith dynasties, which he places at 1898 to 1576 B.C., a length of 322 years. The omission of the five epagomenal days, in a note on a papyrus of the time of Khyan, is supposed to mark his having reformed the calendar. He cuts down the 260 years of the Hyksos great kings to 179 years, freely overlaps the xiiith, xivth, and xvth dynasties, and takes the corrupt reading of 153 years for the xiiith, which disagrees with the average of recorded reigns. His scheme therefore runs as follows:—

xiiith dynasty	xiv	xv	xvi	xvii
1898 B.C.				
	1879			
		1857		
1746	1746			
				1727
		1678	1678	
			1576	1576

On this scheme the Hyksos invasion by Salatis came in the reign of Neferhetep, but no effective hold on all Egypt took place till after the great Sebekhetep family, and after king Ay. This is the best settlement that has yet been put together for the short scale of chronology, but it involves a triple overlapping, including cognate dynasties, and a repudiation of recorded reigns.

Another proposal is brought forward by Mr. Nicklin (1928). He is likewise held up by the Berlin limit for the xiith dynasty, and from a mass of detailed criticism, which is highly debatable, the final result is that he places

	xiii			
xii no. 1–22				
1807 no. 23		xiv	xv	xvi
		1623		
	1560			
			1523	
				1289

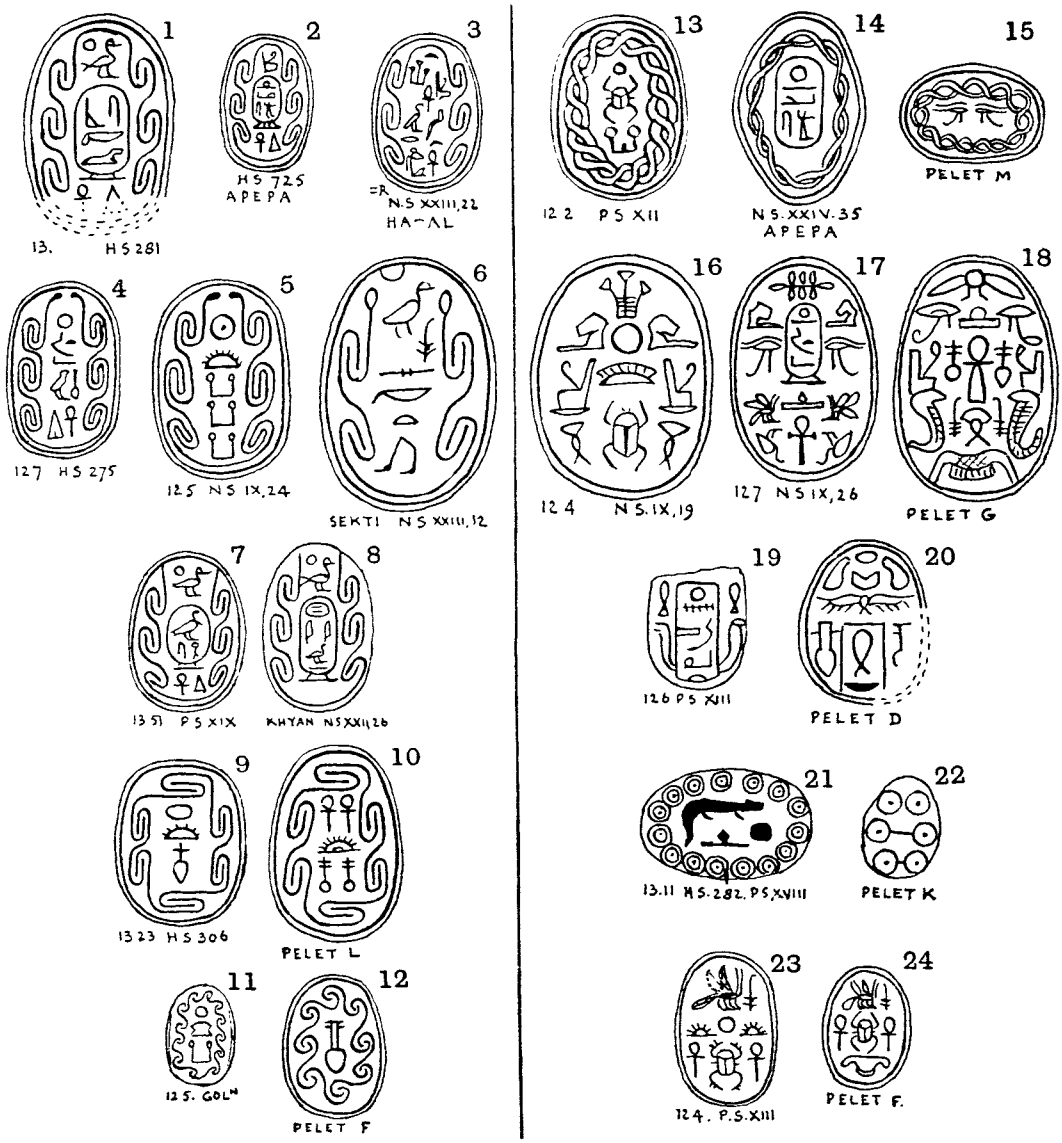
But the Egyptian conquests of Palestine, in Zahi (Phoenicia) by 1582, and at Naharaina, near Aleppo, about 1530, make it impossible to suppose that a line of Syrian princes was recorded down to 1289 in the series of Egyptian kings. The great mass of textual emendations on the basis of monumental numbers is entirely beside the mark, as on papyri both Egyptians and Greeks used cursive numbers which cannot be thus amended.

Now this past winter we are in possession for the first time of a long series of scarabs belonging to a large part—perhaps nearly the whole—of the Hyksos period, found in the cemetery at Beth-pelet. From these it is possible to deal with this age on a monumental basis. There is a wide difference in the quality of work shown in different tomb-groups. Provisionally the groups can be placed in a sequence of styles, and lettered from A to W. In two groups (A, B), the resemblance to good Egyptian work is very close. Soon there follow (in C, D), rougher figures, decomposed signs, and the late Hyksos type of a name between vertical lines. Then comes (F, G), the *rda-n-ra* type, senseless signs, Ra holding uraei, and Hathor. Clumsy lion figures follow (J, K, L), and rough mechanical designs (N). The gazelle, and rows of ring and spot pattern (Q, R), are succeeded by the last stage, of twists, and side lines derived from decomposed *neter* signs (S to W).

Amid these changes there are, down to the middle of the series, various types much resembling Egyptian examples which are dated to known kings (p. 38). So close is the comparison that it is very hard to suppose that these types, decaying and disappearing in the xiiith dynasty, were revived at a later time. The fine continuous border of circular spirals belongs to the xith dynasty and disappears after Senusert I, never appearing on Hyksos scarabs. The border of ovate links begins under Senusert I, and continued till two examples in the xiiith dynasty (Figs. 1, 9), and is never dated later; but it was used by Apepa I (2), Khyan, and once by the vezier Ha-al (3). A variant has the links separate at the top, apparently ending in serpents' heads; such belongs to the close of the xiith dynasty (4, 5), and was used by king Sekti (6). The plain separation at the top is rare in the xiiith dynasty, but was used in very rough work, down to the close of that age, by Nehesi (7), and is parallel with much better work of Khyan (8). The links arranged in a square occur under Sebekhetep IV (9)

and at Beth-pelet in group L (10), halfway through the series. The S-links appear late in the xiith dynasty (11), and in group F at Beth-pelet (12).

The twisted cord comes early in the xiith dynasty (13), also used by Apepa (14) and at M in the Beth-pelet series (15). The placing of scattered pairs of signs around a name is seen in the middle of the xiith dynasty (16), and at the end (17); it was a favourite style in the Hyksos age (18). A square



frame enclosing the name appears late in the xiith dynasty (19), and in group D at Beth-pelet (20). The use of a row of circles, with central dots, made by rotating a centre-bit, began in the xiiith dynasty (21), and at Beth-pelet in group K (22), and continued very usual until the middle of the xviiith dynasty. Lastly, the arrangement of a name with other signs, in the middle of the xiith dynasty (23), is very closely parallel to a scarab from group F at Beth-pelet (24).

In these examples of ten different types, the fashions of the xiith and xiiith dynasties have been so obviously copied that it seems impossible to regard the Hyksos forms as belonging to a much later series, for these types

had vanished by the xivth dynasty. This constitutes a strong case for the Hyksos age having been contemporary with the close of the xiith and all of the xiiith dynasty.

Having gathered this contemporary evidence, we may turn to see how it may consort with the literary record. If we use the record of Manetho, it must be by placing the xvth and xvith dynasties side by side with the xiiith, xivth, and xviith. The first question is the starting point; how early can we place the entry of Salatis, the first of the six great kings? The Delta was occupied by Senusert III, whose statues were at Nebesheh, and buildings at Khataaneh, Moqdam, and Bubastis. But of Amenemhat III there is only the base of a figure at Yehudiyeh; of Amenemhat IV there is nothing, and of Sebeknefru perhaps a small sphinx at Khataaneh. From the monuments of Tanis no conclusion can be drawn regarding the Delta, as it has been shown by M. Daressy that Rameses II had decorated that site by pillaging other temples. It appears that the Delta may have been weakly held at the end of the long reign of Amenemhat III, and the feeble reigns of his children allowed the invasion from Palestine to gain a full hold. It would thus be possible that the reign of Salatis might have begun in the Delta at about the close of the reign of Amenemhat IV. There are, however, some monuments of the xiiith dynasty in the Delta; in the 2nd reign at Benha, in the 4th at Sebennytos, the 15th and 20th at Bubastis, and in the 17th statues probably from Memphis. Thus the lower Delta may have been gradually occupied during the earlier part of the xiiith–xvth dynasties, and the whole of it up to Memphis by the time of the 21st king. For the first 100 years the Hyksos were comparatively weak, under Salatis, Beon, and Apakhnas; but during the reign of Apepa I they conquered the whole country. Turning to the xiiith dynasty, the last king planted in the Delta was the 20th and that, on the average length of the reigns, may have been 150 years after the beginning. So there would be time for Apepa to have occupied all the Delta and claimed rule over all Egypt. Counting back from the end of the xviith dynasty, the recorded periods adjust themselves thus:—

end of xiith dynasty	2375 B.C.	2375 B.C.
	xiiith dynasty 453 years	xvth dynasty 260 years
		2275
last Delta statue	2230?	
Apepa at Gebeleyn		Apepa
Ra-kho-nefer	2200?	2214
Khyan at Gebeleyn		Khyan
		2164
		Assis
		2115
		xvith dynasty 518 years
end of xiiith dynasty	1922	
	xivth dynasty 184 years	
end of xivth dynasty	1738	
	xviith dynasty 151 years	
death of Seqenen-ra / accession of Kames	1597	1597
end of xviith dynasty	1587	

This adjustment involves the conquest of the south late in the reign of Apepa; Ra-kho-nefer Sebekhetep IV recovering power down to Memphis at Apepa's death; then Khyan later repelling him, so that no native kings afterwards appear on buildings north of Abydos. So far there is no impossibility in the adjustment, and the close of the xvith dynasty exactly falls on the date already assigned to the final battle in which Seqenen-ra lost his life when conquering the Hyksos.

The above arrangement does not at all imply that there were not at various times collateral lines of other provincial rulers; one such line ruling at Edfu appears to have been parallel with the xiiith dynasty of Abydos and Thebes, as pointed out in my History (1922), p. 229.

Turning now to the external difficulties of the case. First of all there is the rising of Sirius in the reign of Senusert III, as already specified. In place of the date 1786 or 1898 B.C. for the end of the dynasty (according to which month began the year), the date we have reached by the lengths of dynasties is 2375 B.C. At the latter date, if the 197th day of the year agreed to the rising of Sirius, the new year day from which it was counted was on December 11. This is as close to the seasonal new year, Dec. 22, as our own new year Jan. 1. Our shift is due to small causes of mis-reckoning (said to have been for agreeing with a new moon), and equally therefore the Egyptian December 11 would be recognisable as the seasonal new year. All the difficulties which have tormented chronology for thirty years past have been due to the assumption that the 365-day year was followed in noting the observation of Sirius, but as there is nothing in the statement in a current diary to prove which reckoning was there followed, it is rational to accept the seasonal year which accords with the history otherwise.

Next there is the question of how the Egyptian came to record the series of dynasties as he did. The Turin papyrus does not extend beyond the xiiith and xivth dynasties, as the number of names in that period agrees with the total recorded by Manetho. The position of the Hyksos was not therefore defined till some time near the Greek age. By that period the Hyksos list of the Delta seems to have been appended to the Turin list of Upper Egypt, and then the whole was accepted as continuous.

Some seasonal dates must be considered. The quarrying season marked on stones at Meydum would, on the seasonal year of $365\frac{1}{4}$ days, be from June to November; this agrees with the spare time when there is no agriculture. The seasons of quarrying in Sinai would sometimes be in the heat on either reckoning, and the best known one of Hor-ur-ra, describing the heat, is dated in the 7th to the 9th month, or July and August of the seasonal year. The other inscription of the xiith dynasty is in the third month or February–March. The Hamamat quarry inscriptions fall in the middle of February, and early in March, April, and end of April. The Herkhuf letter of return from Nubia was written at the beginning of March. The quarry inscription of Una records his building a boat in October or November and then finding the water insufficient, as it would be if he desired to bring stone down on the flood. One inscription falls in the heat, late in August, but that was not of quarrying but of the return from Punt, when even Egypt was preferable. The inscription of Tahuti-nekht about the flax harvest would place it in the second week of April; the Coptic calendar places this harvest at March 19, about three weeks earlier.

This seems to be the worst discrepancy, which may be due to rather different date of sowing. In other cases also, the natural seasonal calendar accords with all of these seasonal records. The season of the storm named on the mathematical papyrus at the beginning of the year would be in December, on the seasonal year. The Egyptians now habitually use the lunar year, shifting round the seasons, for religious or official purposes, and the seasonal year when talking of agriculture. So there is no difficulty in accepting that they used two different reckonings anciently to say nothing of four different new years.

There remains now to be considered the relation of these dates in Egypt to history elsewhere. In Babylonia there is no safe synchronism as early as the xiith dynasty, but in Crete there are connections as far back as the 1st dynasty. Taking the more definite relations, we have synchronisms as follow. The page references are to Evans, *Palace of Minos.*

B.C.	dyn.					
2600	xi	M.M. I	(p. 202)			
2450	xii	M.M. II	(270)			
2350	xiii					
2150	xv	M.M. III	(420)			
1550?		L.M. Ia	(II 362)	8 armed	octopus,	natural
1500?		L.M. II		8 armed	„	artificial
				4 armed	„	degraded
				2 armed	„	crude
1400	xviii	L.M. III		2 armed	„	very degraded.

During L.M. II there was time for the degradation of the octopus figure from eight to four arms, and then to two conventional spiral arms; this implies a considerable interval, suggesting an earlier date for L.M. Ia than the above. The beginning of L.M. III cannot be put later than 1400, as it includes the Aegean pottery at Amarna, which was imported, broken, and thrown away by 1370 B.C. Considering the long period of Early Minoan, there does not seem to be any improbability in Middle Minoan and Late Minoan together occupying some twelve centuries.

The general opinion held to be in accord with the monuments, apart from the Sothis-year theory, is shown by the following dates which have been assigned to the end of the xiith dynasty.

Lieblein	in 1873	2108 B.C.
Evans	1905?	2200
Brugsch	1877	2233
British Mus.	1909	2250
Hall	1901	2300
present result	1929	2375
Petrie	1902	2565
Brugsch	1859	2599
Mariette	1876	2640
Maspero	1915	2840
Mariette	1860	2851

Future discoveries will doubtless give further precision. Yet it may be convenient to review the present position of the dynasties, according to the Egyptian reckoning, in the light of the present resettlement.

Dynasty	i	begins	4553 B.C.	Dynasty	x	begins	2814 B.C.
	ii		4300		xi		2629
	iii		3998		xii		2586
	iv		3784		xiii		2375
	v		3500		xiv		1922
	vi		3282		(xv		2375
	vii		3084		xvi		2115)
	viii		3014		xvii		1738
	ix		2914		xviii		1587

FLINDERS PETRIE.

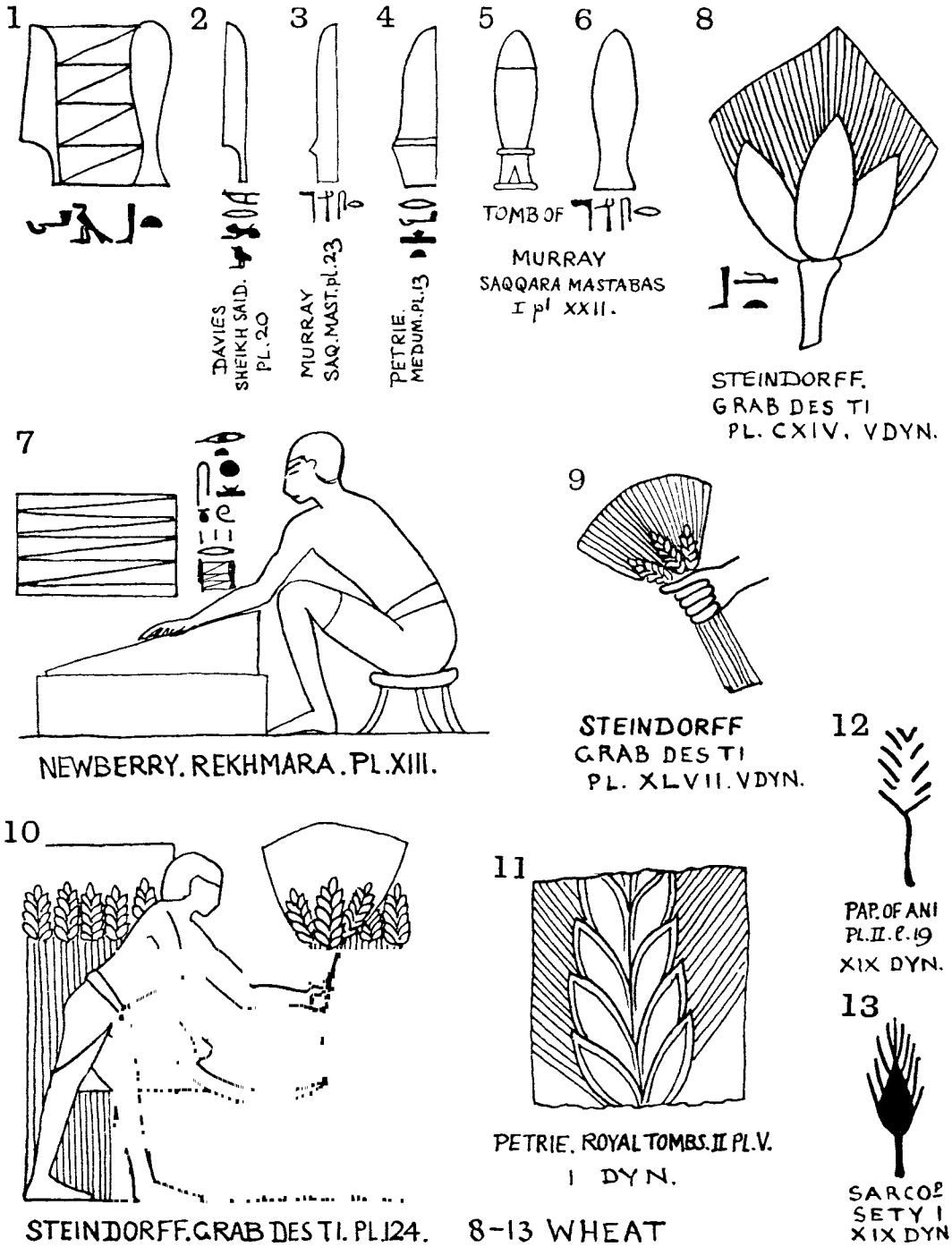
THE SIGN *ÂBT* .

 . This complicated sign reads and means "an offering" (Fig. 1). Erman, misled by the  , places it under the heading of plants, with which it has no connection. The meaning of the word, for which it is sometimes the determinative and sometimes the word-sign, gives the clue. It is in reality a number of offerings placed together, and when split into its component parts these offerings are clearly visible. The first part of the sign is . The table of offerings, at which the deceased is represented sitting, is in the Old Kingdom covered with (Fig. 2), in the vth and vith dynasties these are coloured green and are evidently thought by the artist to be leaves. But Griffith (Hieroglyphs, p. 54) points out that originally these were not leaves but slices of bread, the shape and the colour being identical with the loaves of that period (Figs. 3 and 4). The second part of the sign is  , usually supposed to be the sign which reads  and is generally translated "Majesty." This is a mistake. On reference to the piles of offerings in the wall-sculptures in the tomb of User-neter (Saqqara Mastabas I, pls. xxi–xxiii) a number of vases will be found, sealed with large clay caps and standing in circular pottery stands; the vase has a wide mouth and a pointed or rounded base (Fig. 5). When drawn in outline without detail (Fig. 6) the object approximates as closely to the sign as the slice of bread does to . The third part of the sign is formed by zigzag lines between the two uprights. In the tomb of User-neter there are a certain number of tall pyramidal objects represented; being too tall for their width they are sometimes leaning against heaps of other offerings, and are sometimes laid on the ground in piles one above the other, the wide end of one against the narrow end of the one below. In the tomb of Ti (Steindorff, pl. 47) a man carries a little pile of these objects in his hand. In the tomb of Rekhmara (Newberry, pl. xiii) there is a kitchen scene in which the cooks are making what appear to be cakes, which are shaped like the objects in the tomb of User-neter and are stacked in exactly the same way, though in greater numbers; the effect given is that of the zigzag lines in the sign (Fig. 7). The inscription by the side of one of the cooks gives the words "Making *sekhenu* for offerings" with  used as the word-sign for offering.

The whole sign then is a picture of the food and drink offerings, the bread and beer of the funerary prayers.

Fig. 8 occurs as the name of one of the landed possessions of Ti, following the names of two other possessions, which read respectively  and . The relative position of the three suggests that these were the corn-lands

grouped together. There are two varieties of *seshet*-corn, green and white. Unfortunately there is no means of identifying the species, as the objects carried in the baskets of the women from the *seshet* fields contain when visible



nothing different from the contents of the baskets of other corn-fields. The woman of Ti's *seshet* field carries a box on her head, presumably full of grain though nothing can be seen. In the absence of any definite information it may be allowable to make a suggestion founded on the two colours of the grain,

which points to the use of the corn both ripe and unripe. The only corn which is commonly used in both stages is maize, which was well known in ancient Egypt. The *ỿshed* has been called "apricots" by M. Maspero, but the determinative is certainly that of corn and not of fruit, and the position of Ti's *ỿshed* farm as the leader of the corn-lands bears out this supposition. The third of Ti's corn-fields is written with the sign given in Fig. 8. At first sight it appears like a flower, but on closer examination it proves to be a bunch of ears of corn, reading *bd·t.* Fig. 9 shows a similar bunch carried in the hand, and in Fig. 10 a reaper is holding another bunch preparatory to cutting it. The grain (Fig. 11) can be absolutely identified from a fine piece of 1st dynasty carving from the royal tombs at Abydos. The arrangement of the spikelets proves it to be wheat; it is not spelt, for in spelt the stalk is visible between the spikelets; it is either *triticum sativum dicoccum* or *triticum sativum durum. Dicoccum* grows along the North of Africa, while *durum* is confined to Europe; but the divergence of the awns in the specimen more nearly approaches the *durum* type. The late form of the sign is shown in Fig. 13 from the Sarcophagus of Sety I, and Fig. 12 from the Papyrus of Ani.

M. A. Murray.

A REPAIRED STEELYARD.

THIS steelyard was bought at Minieh, where it may well have been found. It is the property of Mr. Donaldson of the Egyptian State Railways, who has permitted me to publish it. It is made of bronze, and is in fair condition. The type is known in Coptic use, as published in *Weights and Measures*, pls. xvi, xvii. By the three hooks for suspension, A, B, and C, different edges were brought upwards for observing the place of the counterpoise. This is of a spherical form, but it has been badly crushed out of shape. It is formed of a copper shell, containing reddish earth or rust with metallic fragments embedded in it.

The arm has been broken in two places, and mended with a dark, lead-like, solder. The repair on the left has been very badly done, with the result that it has made the arm nearly a quarter of an inch longer than it should be. The scales are cut on three edges of the arm, which is of diamond section. Scale A is divided into halves and twelfths; scale B into halves; scale C has equal divisions throughout, Fig. 2 shows the three scales, side by side, the error due to the length of the arm having been eliminated.

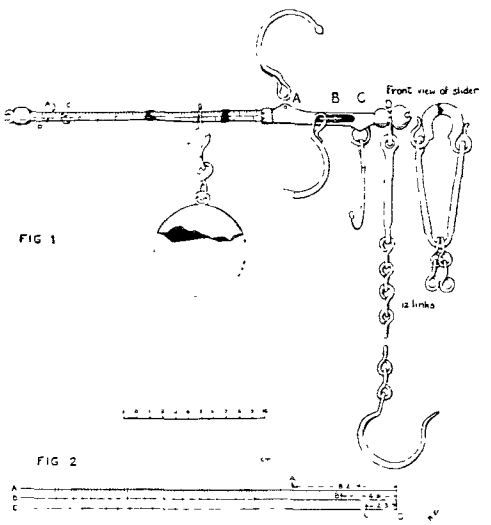


FIG 1

FIG 2

The meat to be weighed was held by two large hooks, one of which remains, attached by chains to the slider or saddle, at the right hand. On lifting any one of the suspensors at A, B, or C, the saddle swivelled round in the grooves at D, and so it was always at a constant position on the length of the beam.

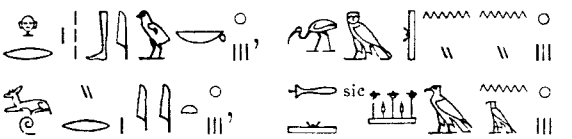
By the principle that "the distance from suspensor to saddle reads the same on its own scale, whichever side is measured" (*W. and M.*, p. 30), we can identify each scale, which is copied below, with the hook which was used for suspension. Thus the distance from A to D reads as 2·85 units on the scale A; B to D reads as 3·0 on the scale B; C to D reads as 2·7 on the scale C. As the makers of steelyards never knew this principle, but divided them by trial and error, the small differences in results easily occurred.

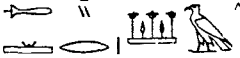
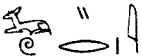
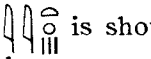
Not having the weight of the beam, nor the centre of gravity, known, we cannot calculate the unit; but the division in twelve strongly shows that this was for the Roman libra and uncia, like the majority of Coptic steelyards. The scale A would read from 4 unciae to 6 librae, B from 5 to 15 librae, C from 16 to 36 librae. The counterpoise would have weighed a libra ±2·9, or about 4 British ounces. The remains of little holes at each end of the beam are probably for attaching small amounts to adjust the correctness of reading from time to time.

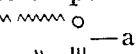
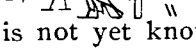
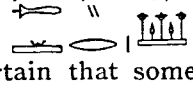
R. ENGELBACH.

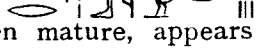
 "FALCON-FACE."

In the Papyrus Lansing XI (Edition Erman-Lange) = Papyrus Anastasi IV, 9. the following plants are named among others:

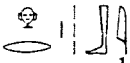


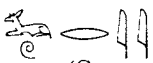
Of these four plant-names we know as yet only two, viz.:  = *Beans*, and  = *Lentils*. Which kind of bean is to be understood by  is shown by the following consideration: that the kind known today by the name of *fūl* فول (*Vicia faba* L.) appears already in the New Kingdom under the same name,  ,  , ϕϵλ, ϕϵλι (B), פול, فول. On the other hand the Oriental bean *par excellence* is *Vigna sinensis* Endl. (Arab.: *lūbia* لوبيه). Consequently  , a word used from the Middle Kingdom onwards, should be a name for the *lūbia*-bean. Representations in fayence of the *lūbia*-bean have been preserved from the Middle Kingdom; these I expect to publish shortly.

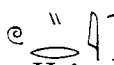
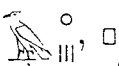
The meaning of  —a name which also appears as  ,  —is not yet known (cp. L. Keimer, *Die Gartenpflanzen im alten Ägypten*, vol. I [1924], pp. 42, 148–149). It probably refers to a leguminous plant like  and  .

It is however quite certain that some kind of legume is to be understood by *ḥrw bik*  "Falcon-face," for there is one Egyptian bean which, when mature, appears like a falcon's face or a falcon's head: *Cicer arientinum* L. (Arab.: *hommos* حمص). It is only necessary to compare the *hommos*-bean figured below with a falcon's head or with the falcon-head of a statue of Horus to realise how striking is the resemblance to the head of a bird of prey. (See end block. *Hommos*-beans of natural size; and a *hommos*-bean enlarged four times.) It would indeed be difficult to find a name, which would characterise better the appearance of the *hommos*-bean than "falcon-face." Moreover Immanuel Löw, in *Die Flora der Juden*, vol. II (1924), p. 427 and 438, has shown that analogous designations for the *hommos*-bean are known in other languages.

Therefore at least four names of Egyptian beans are known from ancient times:

a) *ḥrw byk*  . This word, which is known to me only in the above-mentioned text, does not occur in the Erman-Grapow *Wörterbuch*, either under *ḥr* or under *b*. — Botanical name: *Cicer arientinum* L. Arab.: *hommos* حمص

b) *ỉwrỉ·t*  and var.: = Copt.: ⲁⲣⲱ (S), and ⲟⲩⲣⲱ (S). — Botanical name: *Vigna sinensis* Endl. Arab.: *lūbia* لوبيه

c) *pwr, pr*  ,  = Copt.: ⲫⲉⲗ, ⲫⲉⲗⲓ (B) = Hebr.: פּוֹל = Arab.: فُول. — Botanical name: *Vicia faba* L. Arab.: *fūl* فول

d) *ʿrsn*  and var.: = Copt.: ⲁⲣⲱⲓⲓ (S.B.F), ⲁⲣⲱⲗⲓ (S) = Hebr.: עֲדָשָׁה = Arab.: عدس. — Botanical name: *Lens esculenta* Mch. Arab.: *ʿads* عدس

L. Keimer.

RECENT ANALYSES.

An increased activity in analyzing ancient metal objects, and publication of the results, shows a welcome spread of scientific archaeology. The British Association Committee under Mr. Garfitt's management has collected much in search of the mixture of nickel or other elements that are unusual with copper. Out of 68 specimens from Mohenjo-Daro only 9 were bronzes; 8 contained over $\frac{1}{2}$ *per cent* of nickel, one a nickel bronze with 9 *per cent*; lead was never in alloy. From queen Shubad's tomb a good bronze was found, of 8 *per cent* tin. Central Asian specimens from Makran were mostly high tin bronzes, even up to 32 *per cent.* From earlier results, nickel appears as 2 or 3 *per cent* at Ur and Kish. Tin is usual in Mesopotamian alloy, even up to 14 *per cent.* The search for sources of metal has not yielded much, except at a point outside of the strait of Bab-el-Mandeb, where the proportion of nickel to copper was 1 to 8.

The early Chinese bronzes have been lately analyzed in Japan, and the results published by Mr. Umehara. Of 14 bronze vessels mostly about the Han period (B.C. 200 to A.D. 200) the tin is usually 10 to 15 *per cent*; the earliest (B.C. 250) has only 2 *p. c.* tin, with 41 *p. c.* lead, but lead is usually about half as much as tin. Iron, nickel, zinc, and arsenic, are only slight impurities. Antimony is usually slight, but in the latest specimen (A.D. 265 to 589) it is 9 *p. c.* Mirrors differ from the vessels, in having more tin, usually 25 to 30 *p. c.*, in one of the finest 49 *p. c.* The other ingredients are much as above, except in one instance of 1·83 *p. c.* of nickel, 4·46 *p. c.* of antimony, and 2·63 of arsenic.

Lead has been examined for silver content by Dr. Newton Friend (Institute of Metals, paper 495). Ordinary commercial lead now, desilverized, contains in 10,000 parts, ·2 silver. Sumerian of 3000 B.C., 1·3 silver. Egyptian of 1400 B.C., 2·8 silver. Assyrian of 600 B.C., 1·1 silver. Spartan, 600 B.C., 5·6 silver. British, 200 B.C., ·7 silver. Cyrene, 100 A.D., 1·4 silver. Italy, 100 A.D., 1·0 silver. Roman, Bath, 100 A.D., ·3 to ·5 silver. Roman, Caerleon, 200? A.D., ·2 silver. Roman, Uriconium, 200? A.D., ·5 silver. Roman pigs of lead ·3 to ·8 silver, but one from Somerset 2·5 silver. Mediaeval lead ·3 to ·9 silver. As some of the Roman pigs have EX ARGEN, it seems that they were desilverized, as also the mediaeval specimens. It paid in modern times to re-smelt all the scoriae at the Mendip mines, to recover the silver lost there by Roman working.

Flinders Petrie.

REVIEWS.

Dramatische Texte zu altägyptischen Mysterienspielen. Vol. II. *Der dramatische Ramesseumpapyrus.* By KURT SETHE. Pls. 21, pp. VIII + 181 (Leipzig, Hinrichs), 1928.

An adequate review of this volume of the most ancient of all mystery-plays would require a small book; here it is only possible to indicate a few, very few, of the most important points. That the translation and commentary are by Professor Kurt Sethe is a guarantee that the work is both brilliant and scholarly. The content of the volume is extraordinarily interesting. There is a fascination in mystery-plays of any period, for they show the popular conception of a religion directed and controlled by the priesthood. In this example the conservatism of ancient Egypt appears to have preserved certain beliefs and customs long after they had passed their prime. The date of the actual play can be determined as being of the Middle Kingdom, partly by the name of the King, partly by the other papyri with which it was found; but there is no doubt that the drama had its source in a much higher antiquity, perhaps even as early as the Proto-dynastic period. The action of the play represents the ceremonies connected with the burial of a King and the installation of his successor (in this case, Senusert I). The ceremony of the coronation began by the presentation to the new Pharaoh of the two feathers, two sceptres, a gold ring, and finally an offering of food from "the two Provinces." The feathers and sceptres were the first to be presented, and this ceremony took place on the "Great Sand"; this, as Prof. Sethe points out, must be some place definitely connected with the coronation for it can be paralleled by the "High Sand" at Heliopolis mentioned in the account of his coronation by Piankhy. The double feathers are often connected with the god of generation, Min; and in this text the two sceptres are clearly identified with the generative power of Seth, which Horus, i.e. the new King, incorporates into himself. The ring is also connected, though obscurely, with Seth; while the *wdn*-offering is given from the Two Provinces, presumably the whole of Egypt. Thus the Pharaoh was invested with the power of fertility over Upper Egypt, which as Horus he had already possessed over Lower Egypt. After the presentation of these symbols the personal decoration of the King was performed by means of green and black eye-paint, while resin and incense were offered (burned) before him. Then came the great ceremony of the actual crowning by the Guardian of the Feathers, followed by the coronation banquet. The play ends with the funerary ceremonies for the dead King as performed by his successor. Throughout, the method of presenting the scenes is partly by words spoken by various gods, and partly by stage directions; the papyrus is therefore a stage-manager's manual with "captions." These captions might have been spoken by actors dressed as the gods, or might have been read out by some official; the scenes being certainly

acted in dumb show. This is the fullest dramatic piece which remains to us from Egypt, but from it a number of others in a less perfect state can be recognised, e.g. the Shabaka-inscription in the British Museum. There is one small point which is very interesting: the god Tehuti is continually mentioned by the epithet  , "Bread." This at once explains the meaning of the personal names of the three Seqenen-Ra Kings of the xviith dynasty, all of which begin with the words Ta-aa "Tehuti is great." The only criticism which can be made on this very remarkable book, remarkable even among the many works of Prof. Sethe, is the question as to the latitude which can be allowed in filling up lacunae. A few of Prof. Sethe's suggestions in this direction are more than a little daring, though his profound knowledge of the language and his wide experience often give a brilliant result.

M. A. MURRAY.

Pots and Pans. By H. S. HARRISON. 16mo, 88 pp. (Howe), 1928. 2*s.* 6*d.*

This handbook gives a general outline of the materials and methods involved in making pottery. A little more archaeology would have been useful; for instance, the use of pots on dusty ground in a dry climate led to having ring-stands and therefore round bases to the pots, as flat bases would soon be dirty on a damp pot. Another type of round base is when the centre of gravity is below the centre of the curve, as in big water jars; then the curved base allows of easy tilting by rolling over. There is no imperfection in a round base as compared with a flat base; each is right in its place. The prehistoric Egyptian pottery gives excellent examples of the survival of its original forms; the Amratian in drawn copies of basket patterns, the Gerzean in direct models of stone vases. It may be noted, when naming "Samian" ware, that the figures were sometimes pressed in a mould and then stuck on to the wheel-turned bowl. The Greek red figure vases kept their colour owing to the red clay holding a red earth not a haematite oxide; hence it was not blackened in the reducing fire needful for the black ground. The black can be oxidised red and reduced black any number of times, and often a leak in the furnace let air in and produced red patches on the black ground. A last chapter about "diffusion" has the curious assumption that this is a new idea. But everyone has assumed the diffusion of inventions in all ages, along with the fact of frequent re-invention under the spur of necessity. There is no novelty, except in the denial of re-inventions. Our own Patent Office can tell the tale of incessant re-invention of the same idea from time to time.

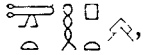
Select specimens of the Archaeological Collection ... Kyoto. By Prof. K. HAMADA. 8vo, xv pp. English, 29 pp. Japanese, 120 pls. (Department of Literature, Imperial University, Kyoto), 1928.

These illustrations of the collection, largely due to Professor Hamada's enterprise, show how the new studies are growing in Japan. Of the plates in collotype, 38 are of Japan, 52 of China, and 29 from other countries. These form an outline of the archaeology of Japan and China; it is curious to see Chinese writing incised on clay tablets, though later than Babylonian work, and open-work bronze buckles which are contemporary with the similar bronze of northern Europe in late Roman times. Archaeology is an old science in China and finds a grateful soil for its modern growth. Every good wish for it!

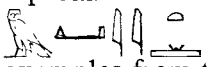
JOURNALS.

Zeitschrift für ägyptische Sprache. Vol. LXII. Part 1, 1926.

SETHE, K.—*Der Horus- und der nb·ty-Name des Königs Cheops.* In this article Sethe reverses the conclusions he arrived at in *Zeitschrift* XXX, p. 52 ff. regarding the readings of the Horus and Nebti names of Khufu. The word written with the sign  is now to be read *mḏd* not *mḏr*, even in the O.K., the  which frequently accompanies the sign in the Nebti name being a preposition. In several kings' names of the O.K., particularly in Dynasty IV, the Horus and Nebti names begin with the same word, but are not identical, e.g. Khafra, whose Horus name was  , his Nebti name . Khufu's names are thus another instance of this custom, the preposition expressing a relationship to the goddesses: "Horus who is *mḏd*, *mḏd* to the two goddesses."

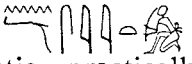
SETHE, K.—*Die mit den Bezeichnungen der Schiffergeräte*  *und*  *gebildeten Namen der Mentuḥotp-Könige.* The signs in question are generally read alike in the Ra names of two kings called Mentuhotep of Dynasty XI. Though it is not impossible for two kings of the same dynasty to have the same Ra name, it is extremely improbable that they would spell it differently. The signs evidently relate to the two objects held by the king in the ceremony of running with the *ḥap* sign and steering oar. The inscription to this scene reads  , bringing the *ḥap*, thus naming one object only, and thus perhaps giving rise to confusion when the *ḥap* sign became obsolete. [For a different explanation of the *ḥap* see *A.E.* 1925, 3, p. 68.] It is impossible that these implements should have had the same name originally. The word for steering oar was probably *ḫrw*. It follows that the Ra names of the two Mentuhoteps were different, the elder's reading "Lord of the *ḥap* is Ra," the younger's being "Lord of the steering oar is Ra." The presence of these implements in these royal names shows that they must have appertained to the captain, otherwise they could not have been attributes of Ra in distinction to the crew.

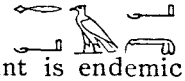
SETHE, K.—*Neuägyptisches m-ḏr für m-dj. Mit Beiträgen zur Erklärung des Amenemope-Buches.* Spiegelberg showed in *Zeitschrift* LX that the preposition  *m-dj* is written  *m-ḏr* in some N.E. and demotic texts, looking like the N.E. temporal conjunction *m-ḏr* "as," "when," found in Coptic as ⲙⲡⲧⲉⲣⲉϥ-ϣⲱⲧⲙ̄ "when he heard." Sethe shows that this substitution is due to similarity in sound, for whilst Coptic ⲙⲡⲧⲉⲣⲉϥ-ϣⲱⲧⲙ̄ corresponds to late demotic *n-d·t ỉr-f sdm*, its *r* being derived from the auxiliary verb *ỉr*, the temporal

particle, deriving from N.E.  , had the sound value ⲛⲧⲉ-. He instances a parallel substitution of  for  in the case of the imperative negative  *m-dyy* immediately before a noun or subjunctive, and adds six examples from the *Instruction of Amenemope* to the two detected therein by Lange.

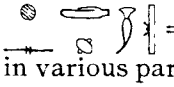
Sethe, K.—*Die angebliche Bezeichnung des Vokals ĕ im Demotischen.* Many words in demotic end with two small strokes before the determinative; these strokes are usually rendered by short *e*. Sethe suggests abandoning entirely this misleading transcription, or at least substituting for it *w*, *y*, *nw*, &c., according to the various derivations. He likewise proposes the substitution of *t* with a diacritic sign (*t'*) for final *t* (deriving from ) which is at present usually given as *te*, as if it were a vowel sound.

Ebbell, B.—*Die ägyptischen Krankheitsnamen.* This is a further section of an article which appeared in *Zeitschrift* LIX. The following identifications are now proposed:—

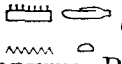
9.  = *Epilepsy*. The remedies for this illness make this identification practically certain, as similar remedies were prescribed for epilepsy by the Greeks. The Egyptian remedies include goat's blood and the fæces of a donkey (the latter presumably to exorcise an evil spirit). Celsus asserts that some sufferers were cured by drinking the warm blood of a gladiator, so that the Egyptian remedy was less barbarous. This belief persisted until quite recent times as a superstition, as epileptics would frequent executions in order to receive human blood.

10.  = *Haematuria*. This equation seems very plausible, as this complaint is endemic in Egypt. It is caused by a parasite worm whose eggs have been found in mummies. It is possible that the ancient Egyptians knew the parasite, in spite of its small size and inaccessibility, as a passage in the Ebers Papyrus (19, 11–18) emphasizes the connection between *ḫrt* worms and  .

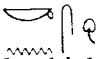
11.  = *Blisters* (Bullae).

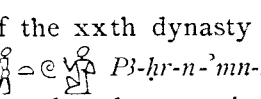
12.  = *beṯer-el-temer*. The name suggests a complaint which is endemic in various parts of the East, and is called *Bouton d'Orient*, Oriental Sore, &c. In Egypt it is called *beṯer-el-temer*, Date Sore, because it breaks out regularly in the date season. The probability is that the ancient Egyptian name and the Arabic term denote one and the same illness, in which case the Arabs must have taken over the name from the Egyptians.

Dawson, Warren R.—*Three Anatomical Terms.*

1.  *mnd·t*, "cheeks." In his preliminary account of the Edwin Smith Papyrus, Professor Breasted expressed the opinion that *mnd·t* is probably a maxillary bone. But the Egyptians had no separate terminology for bones, so that the word must denote the region in which the bone is situated, i.e. cheeks.

2.  *wdd*, "gall," "gall-bladder." This word has hitherto generally been translated "brain." It is found in the list of parts of the body in Pap. Berlin 3027, Verso, 5, 3, between "lungs" and "spleen," indicating an abdominal viscus. This interpretation was confirmed by a passage in the Vizier Inscription, "bitter as *wdd*."

3.  *kns*, "pubes, hypogastric region." This reading is based on material which has been published since Loret's work on Pap. Ebers, when he proposed the meaning "perineum" instead of the former "bas-ventre."

Spiegelberg, W.—*Der heilige Widderkopf des Amon.* In an unpublished papyrus of the xxth dynasty at Turin occurs the personal name  *Pȝ-ḥr-n-ʾmn-nḫtw*, "the head of Amon is strong." Names of this form are theophorous; in this case the divine constituent, "the head of Amon" denotes the horned ram's head, which so often appears as a symbol of Amon in the N.K. and later.

Spiegelberg, W.—*Die Falkenbezeichnung des Verstorbenen in der Spätzeit.* The words *pȝ ʿḥm* in front of a name in the Hellenistic period are explained as "he who has become a falcon." This prefix is found in many Greek names as *Παχομ*. Other terms current in the Late Period for the deceased are *ḥsy* "the drowned," *pȝ ḥry* "the lord," *pȝ rmtʿȝ* "the great man," and *pȝ ntr* "the god," all to be taken as designations of Osiris, with whom the deceased was identified. The writer would also interpret the prefixes *παχομ* "the falcon" and *ποχρουρ* "the frog," when applied to the dead, as personifications of the god of the dead, from which idea the general term "deceased" was evolved, as in the case of "the Osiris." The article concludes with an account of a sandstone stele (No. 22468) recently acquired by the Berlin Museum.

Spiegelberg, W.—*Der Gott Nephotes* (*Nfr-ḥtp*) *und der κυβερνήτης des Nils.* A god named Nephotes occurs in the Silsile inscription (Preisigke, *Sammelbuch*, No. 23). Spiegelberg suggests that this passage indicates Nile festivals at Silsilis, at which the priest of the sacred bark bore the title "steersman" (*κυβερνήτης*); the god worshipped being the Nile, who in the Late Period bore the epithet *Nfr-ḥtp* = *Νεφώτης*, and was represented as a crocodile. In this way *νεφωθ* would acquire the meaning of crocodile. Spiegelberg shows that the first three letters of the word *βαι-νεφωθ* = crocodile (*Aegyptus* VI [1925], p. 197, No. 405) represent *bȝ* = soul.

Spiegelberg, W.—*Der Schlangengott Pe-Neb-onch.* The name *Ns-nb-ʿnḫ*, "belonging to the lord of life," was a common one in the Late Period.

The nature of the god referred to in this theophorous name is revealed by a painted coffin of a mummified snake (Berlin Museum, No. 7232), with a representation of a man offering to a uraeus snake (), and a demotic inscription in which the viper is invoked as *Pȝ-nb-ʿnḫ*.

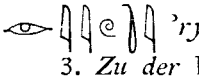
Schäfer, H.—*Das Schlangensärgchen Nr. 7232 der Berliner ägyptischen Sammlung.* This article is a description of the snake's coffin mentioned in the preceding article by Spiegelberg. The coffin was found or bought in Thebes by Minutoli.

It is now considered to be pre-Ptolemaic, probably of the Persian period. On the back of the coffin is painted a man with arms extended and forearms and hands raised, as in the attitude of rejoicing (). Spiegelberg considers this to be an attitude of prayer, though little is known about Egyptian cult movements and positions, and though this particular attitude has not hitherto been found at so early a date.

Spiegelberg, W.—*Die Konjunktion*  *ḥr rʿ* "*zu der Zeit wo, wann, wenn, da, weil.*" Further instances are given of the use of this conjunction meaning "at the time when, when, since, because."

Spiegelberg, W.—*Koptische Miszellen.*

1. **ⲗⲁϩⲙⲉ** "*Backtrog*" *und* **ⲗⲁⲕⲙⲉ** "*Bissen, Brocken.*" These two words are now shown to differ both in meaning and origin; the former means "dough pan" and is presumably of Egyptian derivation, while the latter means "morsel" and is derived from the Arabic.

2. *Das weibliche Qualitativ* **ⲟⲉⲓⲧ** "*gemacht.*" A Coptic text is quoted which confirms one of Sethe's two suggestions (***ⲁⲉⲓⲧ**) for the vocalization of  , the demotic form of the feminine pseudoparticiple of *ʾrỉ*.

3. *Zu der Verschiebung des Worttones vor Suffixen.* It is suggested that the difficulty in understanding late forms, often classed as "barbaric," may be due to the displacement of accent which follows the addition of a suffix.

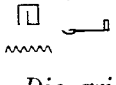
4. **ⲥⲃⲟⲩⲓ** = "*Schüler.*" It is suggested that Coptic **ⲥⲃⲟⲩⲓ** is a Nisbe form of **ⲥⲃⲱ : ⲥⲃⲱⲩ**.

5. *Das ägyptische Prototyp von* **ϩⲱⲗ : ϭⲱⲗ** "*heiser sein.*" Spiegelberg now derives this word from *ḥ3nr* "to be hoarse."

6. **ϩⲓⲡⲡⲉⲩ** = ἱππεύς. This reading, given by Wessely, Spiegelberg considers correct, and sees in the Coptic ending **ⲉⲩ** the Greek vocative (ἱππεῦ) with the "New Greek" pronunciation of *ευ* = *ef*, which stands for the nominative.

7. *Der mutmaßliche mundartliche Unterschied des koptischen* **ⲁⲃⲃⲁ** *und* **ⲁⲡⲁ**. This title is given to monks who have passed through the novitiate. It is suggested that **ⲁⲃⲃⲁ** is the Northern form and **ⲁⲡⲁ** the Southern, though the distinction is not a hard and fast one. The Ethiopian form *amba* agrees with this view, since everything that is Coptic in the Abyssinian cult is borrowed from the Alexandrian Church, and *amba* could easily arise from Boh. **ⲁⲃⲃⲁ**.

8. **ⲛⲧⲁϥ ⲥⲉ** (A) "*er ist es.*" Spiegelberg instances a survival in a Coptic text (Thompson, Gospel of St. John IX, 37) of the curious use in New Egyptian of  meaning "it is thine."

9. ***ϩⲓⲛⲉ : *ϩⲓⲛⲓ** "*bewegen, beugen* (?)." Spiegelberg traces the verbal form **ϩⲛⲧ=** (Zoega, *Catal.* 340 = Steindorff, *Kopt. Gramm.*[2] p. 13*) to this verb, which he derives from  "to bend."

Blok, H. P.—*Die griechischen Lehnwörter im Koptischen.* The Greco-Roman loan words yield valuable information on the phonetic laws of the Alexandrian and later periods, particularly as the Egyptian scribe was frequently compelled to transcribe a Greek word by ear phonetically, through ignorance of Greek. The writer makes a selection from a list of some 4000 Greco-Roman loan words to elucidate the laws which may be compiled from them.

Miscellanea.

SETHE, K.—*Das Zahlwort "fünf."* Sethe now shows the reading of the numeral five to be masc. *dj·w*, fem. *dj·t*. In *Zur ägyptischen Herkunft des hebräischen Maßes Epha* he brings forward confirmation of the derivation of the Hebrew measure Epha from  *ỉpt*.

NEUGEBAUER, O.—*Über die Konstruktion von sp "Mal" im mathematischen Papyrus Rhind.* The writer analyses the rules underlying the combination of *sp* with numerals: those below 10 have *sp* in the plural, while those from 10 upwards have it in the singular.

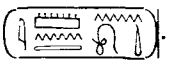
ALBRIGHT, W. F.—*The date of the foundation of the early Egyptian temple of Byblos.* The writer holds that the foundation cannot fall much earlier than Mencheres of the vth dynasty. [But vases of the iind dynasty occur there.]

Under the heading *Aman-ḥatpe, Governor of Palestine*, the writer discusses two letters found at Taanach which emanate from a high official of this name, and "the question may be raised whether this Amenophis ... is not identical with the Amenophis who was governor of Nubia under Thothmes IV."

A third contribution to this section by the writer is headed *Another case of Egyptian û = Coptic ê.*

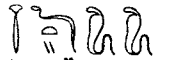
DAWSON, W. R.—*The Papyrus Lansing.* Since reviewing *Hieratic Papyri; Second Series, 1923* in *J.E.A.* IX, 260, the writer has found two duplicate passages in this papyrus.

BISSING, F. W. VON.—*Zwei Gräber eines Toten.* With regard to Bonnet's theory of a connection between two tombs of a king and the double kingdom, von Bissing draws attention to the fact that private persons sometimes possessed two tombs.

STRUVE, W.—*Zum Namen des Königs*  . A solution is given of the difficulty encountered in deriving cuneiform Urdamani from *Tnwt-'Imn.*

In an article headed *Ein Ägypter — Schwiegersohn des Sanherib*, dealing with an Assyrian deed of sale in which the first witness is called Šusanḳu and is a son-in-law of the king, the same writer suggests that this name really represents the name *Ššnḳ*, and that the signatory was one of the numerous petty princes who ruled Egypt at the period.

WIESMANN, H.—**ⲘⲚⲦⲀϥ ⲈⲤⲰⲦⲘ** *er kann nicht hören.* The writer gives examples of the unabbreviated form of the expression **ⲘⲚⲦϥ-ⲤⲰⲦⲘ** to which Sethe drew attention in *Zeitschrift* 57, 138.

In *Elliptische Duale a potiori im Ägyptischen* he finds a parallel in two Egyptian duals to certain Arabic duals, which really represent two distinct words of which one predominates over the other, e.g. "the two moons," really "the sun and the moon." The Egyptian parallels are  "the two Butos," i e. Buto and Nechbet, and  "the two sisters," an epithet of Shu and Tefnut, also of Osiris and Isis.

Wiesmann further contributes to this section notes headed *Zu zwei Schenute-Stellen,* **ⲫⲁⲗ-** *Preis, Wert?, Fortsetzung eines Relativsatzes durch eine Hauptsatz-, bzw. Demonstrativsatzkonstruktion im Koptischen*, and **ϯ-ⲘⲈⲦⲀⲚⲞⲒⲀ** respectively.

L. B. E.

Comptes Rendus, 1927, July.

JÉQUIER, G.—*Les Pyramides non funéraires.* The discovery of the funeral pyramid of Uzebten, queen of Pepy II, at a little distance from his pyramid, has drawn attention to the contrast between this and the other small pyramids known near those of kings. The tomb of this queen,—not yet published,—is noted for "the very remarkable style of its bas-reliefs." Unfortunately no one can judge of this in the absence of any copies or even of any description. The contrast which is stated between this and the small pyramids adjoining the tombs of Khufu and of Menkaura, is hardly valid, as those great pyramids are equally void of sculpture; it was not till after the ivth dynasty that sculpture appears on a pyramid temple, and not till the close of the vth dynasty that inscriptions were placed in a pyramid. It is stated that in the vith dynasty the position of a small pyramid is always to the south of the temple, or south east of the large pyramid. A small pyramid stands in the same relation to that of Pepy II, without any chapel or sepulchral provision; while that of the queen has a stele, table of offerings, and a burial chamber lined with religious texts. Similarly in the time of Teta, at the beginning of that dynasty, there is a small bare pyramid near his, while the two tombs of the queens Khuat and Apuat are placed further away, and have the chapels for the service of the dead. In the earlier pyramids, of the vth dynasty, the adjacent small pyramids have no trace of provision for service: the internal chamber in each pyramid is unfinished. The conclusion of Prof. Jéquier is that such small pyramids were not for burial, but were symbolic, or perhaps served for the celebration of certain rites.

We may remark that there may be a parallelism between these small pyramids and the later model pyramids placed in tombs, such as that of Sebek-hetep in the reign of Sebekemsaf (B.M. 280) and others of the xviiith and xixth dynasties (*Kahun*, xxii). At the beginning of the subject, there is the pyramid of Sneferu at Meydum, with a small pyramid on the south, and a pyramid or mastaba on the north, both within the peribolus wall. Both had sloping passages, and a meagre chamber (*Meydum*, viii, ix). At Gizeh, pyramid 7 of Khufu certainly had a sarcophagus or coffin, not over 38 × 84 inches, as the passages have been cut to allow it being turned. Until a scientific examination of all the pyramids is undertaken, the subject cannot be studied.

Comptes Rendus, 1928.

p. 23. Prince Soutzo described the Egyptian monetary system under Ptolemy I, as based on the old *qedet* of copper. The silver coins equalled 12 qedet and 8 qedet. [These would be equivalent to 10 khoirine and 5 sela, as if they were intended to keep touch with those systems.] The gold pentadrachm of the sela was of the value of a talent.

p. 34. Prof. Moret showed a gold plaque bearing figures of Amenemhat IV offering to Atmu, and a porphyry sphinx of Amenhetep IV "loved by Atmu," the same inscription as on an obsidian box found at Byblos. These things are likewise "from Syria."

p. 58. An unopened tomb at Deir el Medineh was found by M. Bruyère; it contained three coffins, a graduated cubit, bronze vases and other objects; it had belonged to a necropolis official, but was uninscribed.

p. 256. In the report of the Institut Français the work at Deir el Medineh is stated. The important tombs already opened there are those of Sen-nezem the architect (in Cairo, not published), and that of Kha head of the workmen (in Turin, not published). In the houses of the cemetery workmen, many ostraka have been found of the xixth dynasty; also later papyri showing that the ground was occupied in Greek times. The recent work is on tombs of the xviiith and xixth dynasties. The reason of tombs here being unplundered is doubtless because they belonged to officials who had no riches buried with them. The first described is the tomb of Sen-nefer. It lay beneath a destroyed tomb of Hormes, dating before Akhenaten. The funeral furniture was good but simple; the mummiform coffins are of Sen-nefer, his wife Nefertiti, and a nameless infant. The notable objects are the wooden handles of a fan, inlaid with ebony and ivory; a pectoral cloth, painted with a scene of Sen-nefer seated before a table of offerings; a little pectoral of gilt wood; an ebony cubit; four rulers of pine, a cubit long, with invocations of Osiris, Ptah, Amen, and Har-akhti; and five little model vases of copper. On Nefertiti's finger was a silver ring engraved with a seated goddess (Isis), and an electrum ring with the Hathor cow in papyrus grove. Two small wooden ushabtis are not stated to be inscribed.

Another tomb was of the xxth dynasty, proved to have been completely destroyed. A shaft, 120 feet deep, that was opened contained only pieces of tackle which were used to remove the sarcophagus of Onkh-nes ra-nefer ab. This was extracted by the naval party sent to remove the obelisk for the Place de la Concorde in 1831, as proved by documents left in the pit. Like other French abstractions, as the Abydos Table of Kings, the sarcophagus was sold to the British Museum.

The excavations at Medamud are, happily, in course of publication, though the important section of the xiiith dynasty has not yet appeared. The temple was begun by Ptolemy Epiphanes, 200 B.C. and continued till the time of Diocletian. The foundation blocks show that there was a temple of Euergetes about forty years earlier, or even of Philadelphos. The temple appears to have had a fore part (lying E. to W.) dedicated to a triad, and behind that the sanctuary of the sacred bull, lying N. to S. A gateway of Senusert III had been absorbed in the later temple. The triad was of Mentu, Rat-taui and Hor-pa-ra, superseded later by Amen, Mut, and Khensu. The building was arranged accordingly in a tripartite system. A large court at the back with a separate entrance was for public or private festivals. From the foundations of the later temples there have now been recovered 120 blocks of the xiith and xiiith dynasties. We have already seen report of remains of Ugaf the first king of the xiiith dynasty; now there are reported, also, works of Ra-sezef-ka Amenemhat 14th king; Ra-sekhem-khu-taui Sebekhetep 15th king; Ra-sekhem-suaz-taui Sebekhetep 20th king; and Ra-sekhem-uaz-khou Sebekemsaf, whose position is not stated in the lists, but who has been supposed to be of the Edfu dynasty and to have held the Thebaid as about the 18th or 19th king of the succession.

p. 329). 9 Nov. 1928. M. Virolleaud, in his annual report on archaeological work in Syria, states "it has been decided that the portable antiquities shall be henceforward divided in equal parts between the State and the excavator; no measure appears more suitable to aid further the development of researches."

The previous regulations were not so favourable to the excavator, and they do not seem to have met with response.

p. 361). M. Jéquier found at Saqqarah statuettes of Ishtar and other Assyrian deities, which had the heads, arms, and legs sawn off, in order to destroy their power. He attributes them to the Assyrian invasion of the viith century.

p. 371). M^lle^ Homburger collects the Egyptian names of parts of the body compared with Negro-african: the resemblances seem but few.

Syria IX, fasc. IV.

PRZEWORSKI, S.—*Les figurines assises et le char divin.* Various Hittite figures of a seated deity here wear a conical cap with flat top, in fact a tarbush, but without any point or streamer hanging from it such as are usual on South Syrian figures. This form of cap seems to be that of the ivory figure of a god found with Ashtoreth figures at Beth-pelet.

JEAN, C. F.—*Les Hyksos sont-ils les inventeurs de l'alphabet?* This is a long article criticising in detail the various theories about the hieroglyphic inscriptions of Serabit, principally the view of Sethe. That the source of the alphabet was not the cuneiform is concluded because cuneiform had not only vowel signs, but different signs for each syllable according to the vowel, while Phoenician had no vowel signs. [This begs the question whether Semitic did not misappropriate vowel signs in the alphabet borrowed from elsewhere.] Nor was the alphabet derived from Cypriote, because Cypriote is later, and is syllabic, even thus adding vowels in transliterating Greek. Also it fails to distinguish different gutturals, and different dentals, which are markedly distinguished in Semitic. Nor was the alphabet derived from pre-hieroglyphic signary, because many signs are cursive hieroglyphs, or simple marks. [This might be said with equal probability of any beginning of an alphabet.] Lastly, there is the theory of an Egyptian origin of the Serabit script, and hence of the Phoenician. [Owing to the Nabathaean inscriptions being commonly termed Sinaitic, it is best to name this early writing from Serabit, where alone it is found.]

The Egyptian signs are classified (1) tri-consonantal (as *kheper*), (2) bi-consonantal (as *men*) and (3) mono-consonantal (as *ab*, *ur*). From the mono-consonantal were selected the signs for single consonants (as *b*, *m*, *n*). But the Egyptian never threw off the bi- and tri-consonants, so as to get a pure alphabet like Phoenician. Then when the Phoenician borrowed from Egypt, all the signs which he added were derived by acrophony, drawing an object the name of which began with the sound to be expressed. Sethe propounds that this development took place among the Hyksos expelled from Egypt to Sinai; this is supported by the Hyksos being termed by Manetho Phoinikes. Such an equivalent is supported by the name Fenkhu for people in Canaan in the xviiith dynasty. [Misprinted xiii.]

The Serabit inscriptions are then discussed. From the Egyptian figure of a sphinx, the drawing of Ptah, and the presence of some Egyptian signs, it is concluded that the writing must be that of Semites coming from Egypt, and such people before the xviiith dynasty must be the Hyksos. Such are the main points of the case for the Hyksos origin of the writing.

On this M. Jean sums up, (1) that the alphabet was used in Phoenicia in the xiiith century. (2) That there are Egyptian influences in it. (3) That it

would be difficult to admit that it was born in Canaan in the xvth or xivth centuries, because the cuneiform letters of that age have Canaanite glosses using initial vowels, while the Phoenician alphabet has no vowels. (4) The forms of the earliest signs at Byblos in the xiiith century are not original, but show a stage of evolution of the alphabet, and this stage would have been while Syria was under Babylonian influence; whereas the alphabet was started in a region free of Babylonian writing, and passed thence into Canaan. (5) It is not known that the Hyksos ever were in Sinai. (6) Butin attributes the Serabit script to Semites working with Egyptians in Sinai. But could they read? and is it likely that they would have the mind to start such invention? (7) Do the Serabit signs represent an intermediate stage between Egyptian and Phoenician? But the values of the signs like Egyptian (eye and cross) are different values in the supposed rendering of the Serabitic.

A comparative table is given of the signs in eight alphabets. [Only ten of the signs are connected with signs in Egypt, and four of those are never used in ordinary hieroglyphs, and could not be transferred from a current knowledge of Egyptian. There is therefore a very slender connection with Egypt.]

M. Jean concludes, (1) there are more signs at Serabit than in Semitic. (2) Some signs are like archaic Phoenician. (3) Only one group of signs is often reproduced. (4) In reading this group of signs according to the values of the Phoenician which they resemble, or of which the traditional names signify the object figured, one can obtain P'ALT which with the change to B may be Ba'alat or Hathor. (5) Among the other signs there are some which resemble Egyptian, but one cannot be certain of their values. (6) It seems that these signs derive from consonant hieroglyphs in Egyptian. (7) But if these values are adopted, the readings are at least doubtful. (8) The supposed translations of such texts are very discrepant. One can only say that the Egyptian writing has perhaps sometimes inspired the Serabitic. Praetorius has suggested that the Phoenician writing was not descended from the script of Mesha, or a little earlier, but from a much older script which was essentially alphabetic. To this Jean agrees, but it does not seem that one can define it further. The hypothesis that it was derived from Egyptian through Serabitic does not seem sufficiently established: thus one may still doubt the existence of an alphabet at Serabit.

After more than twenty years it does not seem therefore, from this article of M. Jean, that we can say more than the conclusions stated at the first discovery of the Serabit writing:—"I am disposed to see in this, one of the many alphabets which were in use in the Mediterranean lands long before the fixed alphabet selected by the Phoenicians. A mass of signs was used continuously from 6000 or 7000 B.C. until out of it were crystallized the alphabets of the Mediterranean,—the Karians and the Celtiberians preserving the greatest number of signs, the Semites and Phoenicians keeping fewer. The two systems of writing, pictorial and linear, which Dr. Evans has found to have been used in Crete, long before the Phoenician age, show how several systems were in use. Some of the workmen employed by the Egyptians, probably the Aamu or Retennu,—Syrians,—who are often named, had this system of linear signs which we have found; they naturally mixed many hieroglyphs with it, borrowed from their masters." (PETRIE, *Researches in Sinai*, 131.) Certainly as far back as the xiith dynasty, names were written in such signs (*Kahun*, xxvii, 85;

Buttons and Design Scarabs, vi, 72 B), and the system of the same signs extends unbroken from the prehistoric ages. Serabitic writing is a late and degraded jumble of signs that had long been used in cursive writing, mixed with others borrowed from rectilineal sculpturing.

DUNAND, M.—*Les Égyptiens à Beyrouth.* M. Moret described to the Academy a sphinx with the name of Amenemhat IV, and a gold pectoral of the same king, stated to have been found in Syria. M. Dunand has identified the sphinx as that recently bought for the British Museum; but he does not seem to notice that the head has been cut back a good deal in transforming it from the Leonine bushy hair and ears into the human type; it was originally probably exactly of the type of the Tanis sphinxes. By enquiries at Beyrut, he believes that it can be identified with a sphinx which was found in course of excavation for a municipal building in the middle of Beyrut, at the market place. The pectoral of Amenemhat has, it is said, been stolen from Byblos since the last excavations. It is agreed, in a discussion at the Academy, that a gold statuette and various gold ornaments have been sold from Byblos, and the large amount of objects which collectors have obtained, during the excavations, leaves no doubt about leakage.

ABEL et BARROIS.—*Fouilles ... à Neirab.* This begins with an apology for the lack of definite tomb groups, for "when one reaches the tomb itself, whatever the precautions, it is often difficult to attempt a certain attribution." The contents of this cemetery appear therefore as a mass of objects of various dates without any discrimination. There is a long jar of about 850 B.C. Greek pottery of 500 to 300, a piece of a Roman moulded figure, arrow heads of 600 B.C. or earlier, and two duck weights which are probably the earliest things. As there is no connection stated between any of the objects, such excavation might as well have been left to a dealer.

In a review, M. Dussaud stoutly defends the date of the tomb of Ahiram, not only on the ground of the vases of Ramessu II, but because they are only contributory to the main evidence of the fine Mykenaean pottery and the ivory from the same tomb. The age of the Phoenician inscription is assured.

In a review of M. Picard's Geology of the Kishon valley, his conclusion is that the Chellean and Mousterian are represented, but there is no Solutrean and the Magdalenian is doubtful. This suggests that the Solutreans did not break in there, but the Mousterian was left to wear down into the Magdalenian.

The question of the altars of the Old Testament comes up, and Max Lohr, as well as his reviewer Dussaud, hold that archaeologically the early date of the incense altar is certain, so literary criticism must again climb down.

The Jewish Quarterly Review, April 1929.

SPEISER, E. A.—*Some prehistoric antiquities from Mesopotamia.* This record results from a mound Tepe Gawra, northeast of Mosul. A complete record was obtained of every period from about 4000 to 2500 B.C. The stages may be named as "Pottery painters," "Shrine Builders," and "Early Bronze people." The first stage is regarded as identical with the Early Elamite; the people of the second stage came from the south, probably Early Semites of Babylonia before the Sumerians; the third stage is Sumerian-Accadian culture of the time

of Sargon I. "The older the pottery, the finer the ware and the more original the decoration. The very lowest stratum furnished what were by far the most beautiful fragments." A mere fortnight of work has produced valuable results, and these we need to correlate with innumerable other sites which await a digger. Are we always to neglect our opportunities?

Art and Archaeology, May 1929. This gives a curious figure of a bronze mirror of Egyptian form, which has on it incised Greek lettering, found to be copied from a passage on the Rosetta stone. It is copied from that identical version of the decree, because two differing forms of A are similarly used in the parallel words. As the inscription is reversed, it is suggested that it was made from a blackened copy of the stone which was circulated soon after it was found. But as the letters are incised in the bronze, it is probably a *cire perdue* casting, and was modelled in relief, which accounts for the reversal of the direction.

Palestine Exploration Fund, April 1929. This contains a further report by Mr. Rowe on excavation at Beth-shan. The temple of Tehutmes III has been fully cleared, and the south wall of the fort of this age. The views of the temple of the god Mekal raise the question of the restoration of the walls. Some, in parts of the scene, are like those found in ruins, rounded and damaged. But the show parts of the temple are all squared up, apparently by a liberal use of fresh plaster. We have been accustomed to a good deal of restoration in Crete, but the reworking of walls to sharp edges, flat sides, and a uniform top is a process full of danger to archaeology. If copied by unscrupulous hands, it would destroy all value in the discoveries, and such treatment is better avoided, however it may improve the look of a site. The most striking object found was a panel of basalt, with a combat of a lion and a dog rampant, at the top, and below that a lion attacked by a dog springing on its haunch which it bites. The work is hammer dressing with some engraved lines of detail, intermediate between the quality of Hittite and Assyrian work. Among small objects is a Syro-Hittite cylinder stated to be of the age of Tehutmes III. The figures of two goats crossing and three stars, is almost exactly that of a cylinder found at Beth-pelet in a grave with two scarabs which can hardly be before the xixth dynasty. Two scarabs of Tehutmes III are coarse copies made in Palestine.

Sitzungsberichte der Bayerischen Akademie, 1928, 8.

Bissing, F. W. von.—*Tine.* This site is a little north of Minieh on the east bank, marked as Tinah. It has a fort of Men-kheper-ra of the xxist dynasty, similar to El Hibeh and other forts on the eastern bank to guard the Nile approach to Thebes. There are high walls and some alabaster columns, and lines of houses of a town, with pottery of late Greek age; there is also late Roman building and pottery.

Archiv für Orientforschung. Band V. Heft 2/3, 1929. Von Bissing, F. *Probleme der ägyptischen Vorgeschichte.*

The whole of this long paper can be summed up in the quotation with which Dr. von Bissing concludes, "Every new object of any importance from these early times merely serves to convince us, if we are wise, of the extent of our ignorance." Dr. von Bissing has attempted to gather together all the

evidence, for and against, as to early intercourse between Egypt and Mesopotamia. He denies that there was any foreign influence in prehistoric times in the Nile Valley, although in discussing the pear-shaped mace-heads he acknowledges that similar weapons are found in Mesopotamia, occasionally decorated in relief like the great limestone mace-heads of Hierakonpolis (these, by a curious slip, he calls ivory). He takes each point in succession—pottery-stands, cylinder seals, forms of boats, brick-building, the *motif* of the man between two lions on the Gebel Araq knife-handle, the snake-necked leopards, and so on,—but in none of these does he see reason to believe that there was any real connection between Egypt and the contemporary civilisations. The Nile Valley produced an entirely independent civilisation which was not beholden to any other country for any of its inventions or artistic *motifs*. This is Dr. von Bissing's point of view, and he brings forward arguments in favour of it.

M. A. MURRAY.

Metropolitan Museum, New York. Egyptian Expedition 1927–28. This report describes the work of clearing out the ancient quarry in which the fragments of the statues of Hatshepsut had been buried, after their destruction by Tehutmes III. Some most fruitful work in Egypt now consists in undoing the destructions of the past. At Karnak the beautiful work of Amenhetep I, the granite shrine of Hatshepsut, and the buildings of Akhenaten are now being reconstituted. So also at Deir el Bahri, all the wealth of statuary which filled the temple is now gradually being brought to light and restored. What enormously increased the labour of this clearance was that the whole of the material of seven years' clearing of the Deir el Bahri temple by Naville had been shot into the hollow upon the sculptures. Thus 100,000 tons of rubbish had to be shifted, which was not there a generation ago. It was the same dumping which buried the tomb of the architect Sen-mut, found and described by Mr. Winlock (ANC. EG. 1928, 59). In a much more recent excavation in Egypt, the material has all been dumped on the top of a cemetery, and will some day have to be moved again. This mode of selfish working has lumbered Qurneh and Saqqara cemeteries so that it is most difficult to make proper research. Unhappily this labour of years of clearance and restoration of fragments cannot promise us more history, and it is sad to see Mr. Winlock's judgment and abilities used up in providing decoration for museums.

An account is given of the paintings in the oasis of Khargeh, of late Roman period, and based on classical work like that in early manuscripts. Emblematic figures of Peace, Justice, and Prayer are mixed with figures of patriarchs, a stage of art much better than that of catacomb paintings. An astonishing front view of a peacock fills the width of a pendentive. From coins found there, this work is of about the middle of the ivth century.

In the copying of tomb paintings, Mr. Davies states that his work on the great tomb of Rekh-ma-ra is "as good as finished." He discourses on the figures of the captive women coming up to produce their children to be recorded, rather like the register of Trimalchio. The great work of preserving the tomb paintings in accurate copies is happily progressing.

NOTES AND NEWS.

THE BRITISH SCHOOL OF EGYPTIAN ARCHAEOLOGY.

The Annual Exhibition held this summer has been the most successful since the War. The Hyksos and Philistine series of discoveries greatly interested the public, and this interest in historical research was increased by the new solution of long-standing difficulties in the Egyptian history. The scholars who went into the matter were well content to accept the settlement of the chronology proposed in this number, and the consequent fixing of the dates in prehistoric Europe.

Although Palestine has abandoned its reputation for tranquillity, there is no reason to anticipate any hindrance in continuing our happy relations with the settled Arabs in the south, who have proved so amenable and honest in our work. In the coming winter, therefore, it is hoped to gain further results from the Hyksos remains at Beth-pelet, to clear a large building of the period of Solomon, and to work out the important prehistoric sites. When such a valuable region is clearly in hand, we ought to reap the results fully and without delay. But all the work must depend on public support at home. Our reserves have been freely used as far as is prudent, and unless there is more support forthwith, the work will have to be reduced to half strength, and we shall only get half results. The decisive bearing, however, of these material remains upon the vexed questions of Biblical criticism as well as on the history of Egypt, render this an urgent matter. Contributions are received at University College by Lady Petrie.

The Dramatic papyrus, of which the publication is reviewed in this number, has been presented to the British Museum by the British School which discovered it and Dr. Alan Gardiner who prepared it for publication.

THE BRITISH SCHOOL OF JERUSALEM.

Miss Garrod has been excavating in the great cave at Athlit near Haifa, on behalf of the British School in Jerusalem. She has reached down to the Mousterian level; above that were three strata of late Palaeolithic age, then the Mesolithic in which was a burial of ten youths with a carving of a head; above this was the Bronze Age deposit. Thus for the later part of the Stone Age this gives a clear sequence of types.

Mr. Brunton's discovery of a pre-Badarian culture in the Nile valley is the amplification of Miss Caton-Thompson's ruder Fayum remains. The flint work is closely like that of the earliest but one of the Neolithic sites in South Palestine found this year by our School. The most important matter is that it proves to be the source of the incised black beakers, which were known sporadically before. These look like much higher productions than the rest of the connections, and suggest import or immigration from a more advanced source. Meanwhile this age is now called the Tasian, and is followed by the Badarian, Amratian, Gerzean, and Semainian prehistoric, all before the 1st dynasty.

At Zimbabwe Miss Caton-Thompson has excavated down to a fine floor of granite ten feet under the surface, and found various remains on the way. Her conclusion is that the work is due to a native tribe.

Early customs remain in Lake Menzaleh, that desolate corner of the Delta. In the midst of it is Matarieh, and on the Prime Minister's visit there, bullocks were sacrificed in order that he should step over the blood as a lucky omen. His purpose in going there was to lay the foundation stones of village hospitals, much needed where such sacrifices are thought beneficial.

THE EGYPTIAN LILY.

THE historical value of decoration has never received the attention which it deserves. To compare two or three examples together from different lands may show some part of their story, but they need a context. What we require for study is a series of wide extent, in which any new example may take its place, that the relations of it, in time and place, may be compared. With a view to beginning this, I have copied about two thousand dated and placed examples, and already several historical results of much interest have appeared.

Articles of utility may be re-invented any number of times independently, and lost to knowledge by neglect or trade opposition; this was the case with the remarkable inventions of automatic looms and saw mills before 1660 at Danzig. On the contrary, the arbitrary nature of decoration, without any urge of utility, leaves it free to be devised without any direction of the impulse. The resemblances of decoration seen in various lands have therefore great value as indicators of the movements of trade, of culture, of conquest, or of race. The comparative study of decoration gives an organized mode of research into ages which are without a record. One may illustrate the method, and its wide implications, by a study of the derivatives of the Egyptian form of the lily which show connections of countries and the continuity of art.

Beneath each of the drawings, the period is stated as EM, or MM, or LM (Early, Middle, or Late Minoan), each divided in three stages; or else the date in years is marked, – for B.C. or + for A.D.; this dating is often difficult to ascertain from the publications. The place where the design was found is quoted; and, lastly, the reference to the book source, as follows:—A.O. *Alte Orient*; A.S. Andrae and Schäfer; B.A.S. Blavignac, *Architecture Sacrée*; B.K. Blegen, *Korakou*; C.I.P. Cohn, *Indische Plastik*; D.C.O. Delaporte, *Cylindres Orientaux*; E.P.M. Evans, *Palace of Minos*; F.L.M. Furtwangler-Loescheke, *Mykenische Vasen*; F.P. own copy; G.A. Gusman, *Art Decoratif*; H.W. Hayes Ward, *Seal Cylinders*; K.B. *Kunstgesch. in Bildern*; K.M. *Kircherian Museum*; K.T. Koch, *Terrakotten camp.*; M.A.A. *Mem. Amer. Acad. Rome*; M.A.K. Montelius, *Ältere Kulturperioden*; M.I. Montelius, *Prim. Civ. Ital.*; M.S. Metz, *Frühkretische Siegel*; P.A.H. Pottier, *Art Hittite*; P.A. Petrie, *Amarna*; P.C. Perrot and Chipiez; P.I.K. Petrie, *Illahun and Kahun*; R.M.P. Renan, *Mission en Phénicie*; R.S. Riegl, *Spätröm. Kunst*; S.A. Strzygowski, *Altai-Iran*; S.A.A. *Ann. Scuola Archeol. Atena*; T.A.P. *Trans. Dep. Arch.* Pennsylvania; U.C. University College; Φ Photographs.

The lily motive seems to have originated in Crete, amid that rich appreciation of nature which surrounds all Cretan art. In the Middle Minoan III, on the great jars at Knossos (Fig. 1), and on fresco (2), the lily is triumphantly used at about 2300 B.C. The group of lilies is perhaps the noblest decoration ever devised, and the closest to nature, for the natural plant can be here taken without any artificial alterations, and simply adopted in a fitting group. In a few

centuries it was changed, and by about 1600 it was modified (4) in its form of growth, but retained the projecting pistils and the re-curved petals, which always distinguish it. The Late Helladic 5, 7, are of about the same age, and the less natural form 3, is of about 1400. The form of flower was adapted to a branching plant, 6, suggesting that it was not well known in Rhodes.

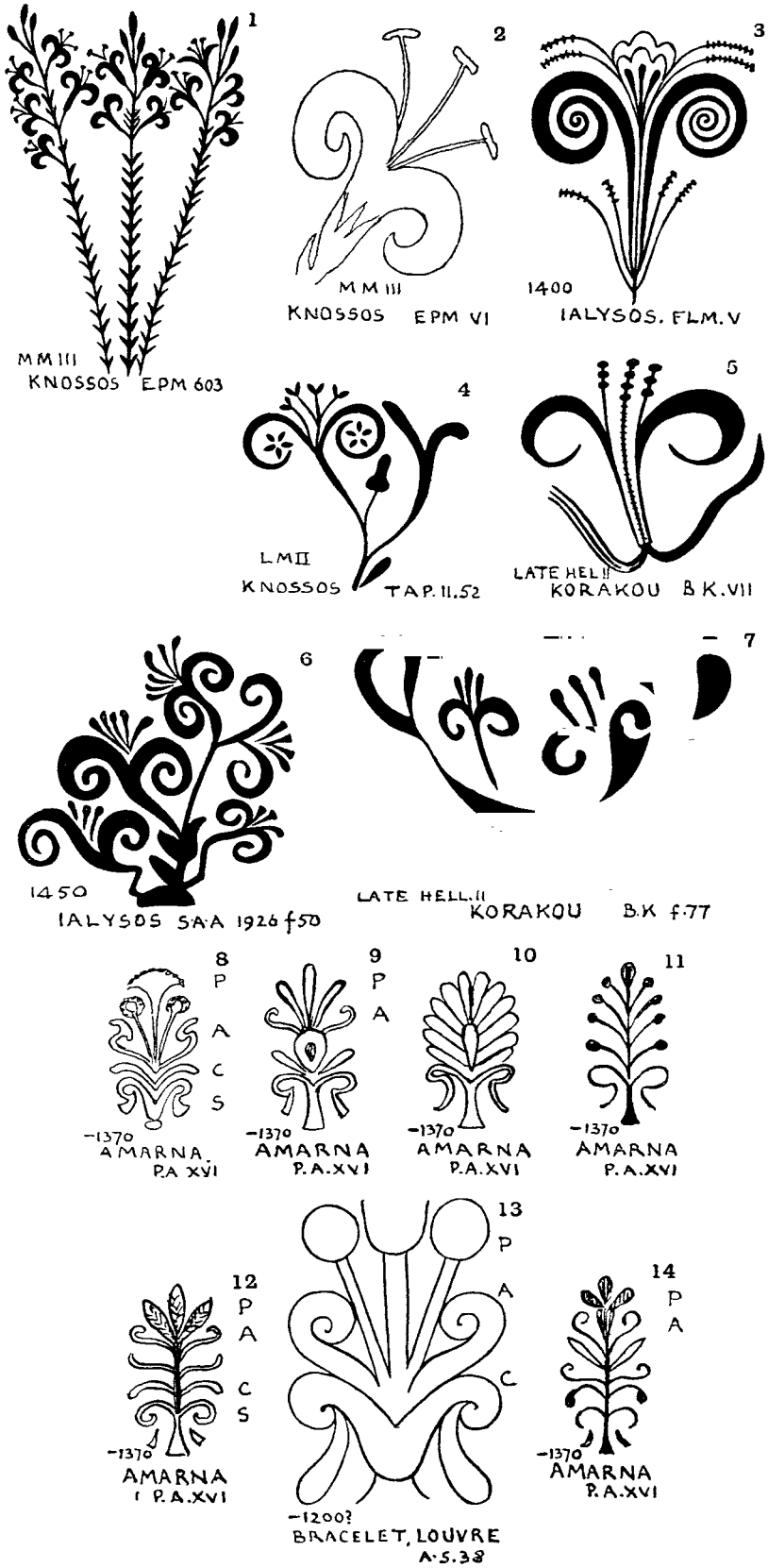
The lily in the Cretan form thus passed down to being merely a flower, at the mercy of any one who needed such to fill a space, regardless of its nature. But in Egypt it became fixed in its botanical aspect of the parts, and this permanent type went through immense changes. The most perfect example is on a glazed ring bezel, 8, from Amarna (see also *Objects of Daily Use* xii, 39). On this the detail is much more precise than on the Cretan paintings; the straight pistil, P, is made triple, and the anthers, A, are shewn below in their peculiar form; beneath are the calyx, C, and the thin spathe, S, with the withered tip dangling. This is in accord with the style of botanical detail on other Egyptian work, but it appears that though the designer knew the flower he could not include the deeply curved petals, and simplified them; the size and prominence of the stamens was what he felt to be characteristic. This was simplified in Fig. 9, which retains the up-turned anthers, a feature which lasted in transformations down to the bitter end in Catholic Italy. Figs. 10, 11, are early departures into senseless types. 12 and 14 maintain the parts, but double the anthers. 13 has the anthers and pistils, but has merged the calyx with the spathe, keeping the dried tips of the spathe as coming from the calyx. This compound form of calyx lasted on into Assyria and Cyprus. Much simplified forms are in 19 to 21.

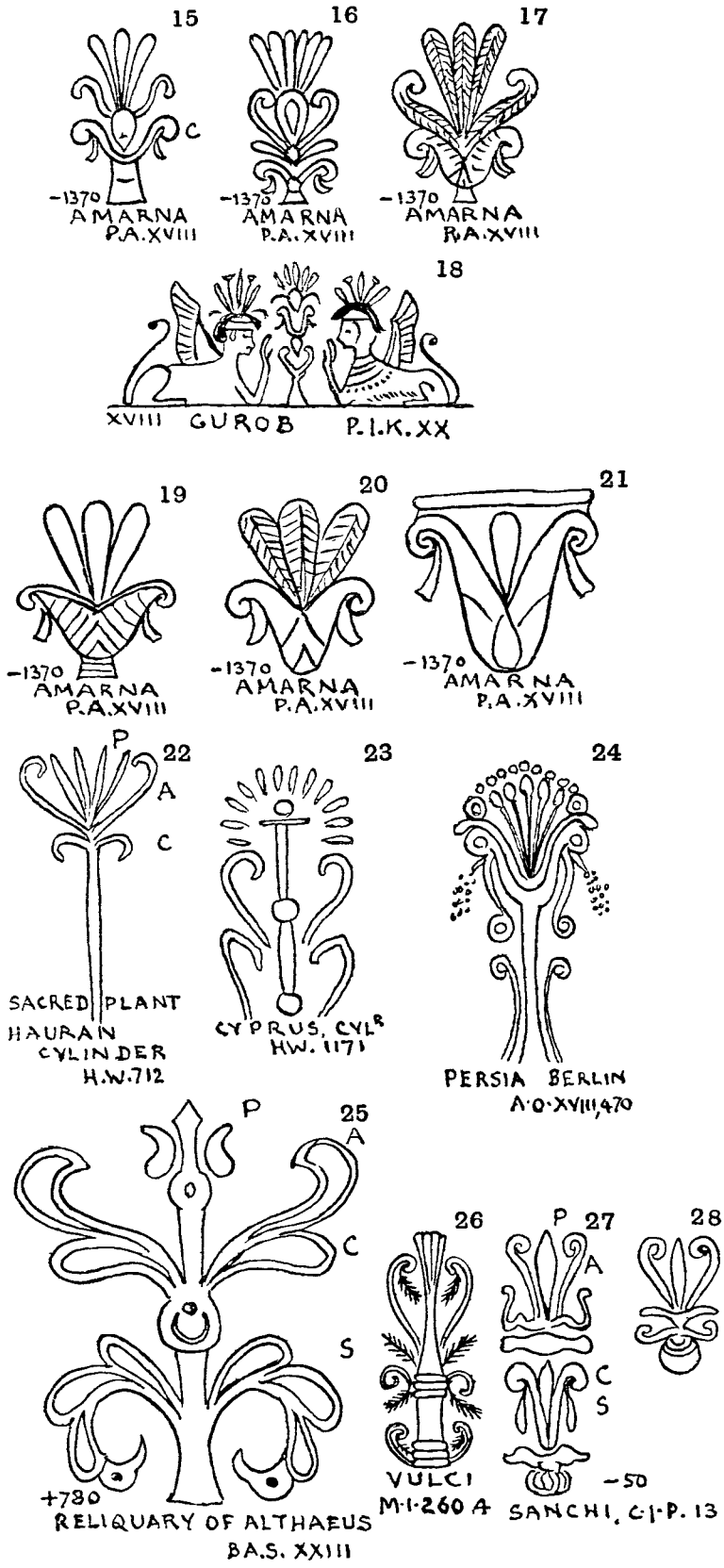
Now we pass to the changes in other lands. On a cylinder from the Hauran, 22, the different parts are maintained, but they are wildly changed on one from Cyprus, 23, where the idea of a column has come in, yet the incurved anthers remain. In Persia further changes took place (24) where the tips of the spathe became bunches of dates, and the idea of a kind of palm ruled the form. The change in 25, based on a tree form, is probably of Persian work; yet even here the original parts are visible, but the tips of the spathe have become birds' heads. An Italian form at Vulci, 26, brought in sprays, though dimly keeping the proper parts. Such a form passed to India, 27, 28, where the calyx and spathe survived.

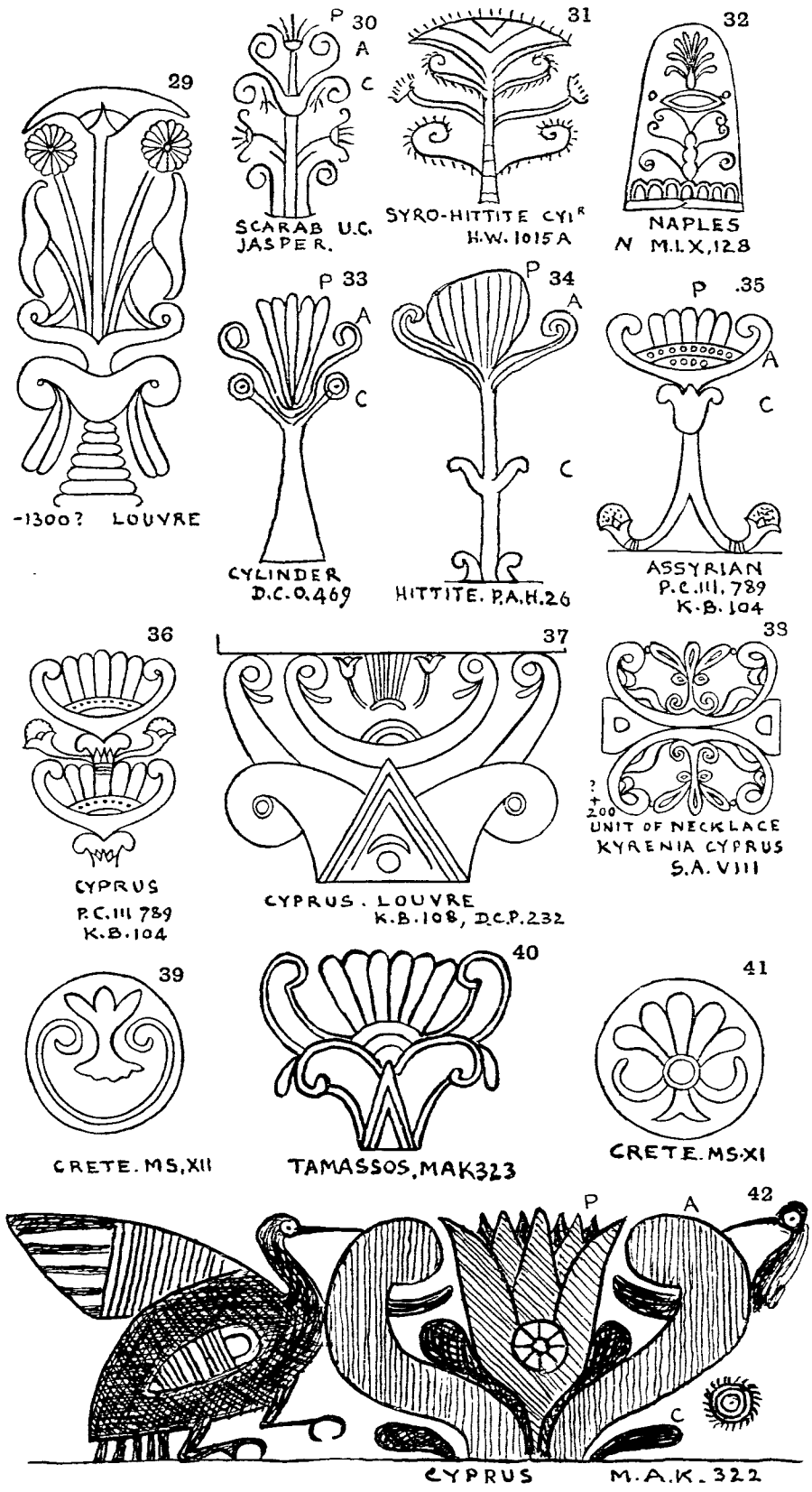
Further changes gradually came in. The pistils were entirely changed into a varied group of flowers (29), while the anthers and calyx remained. Another form is in 30, as lettered on the drawing, where the tips of the spathe are little flowers, and supplementary flowers are added below. On a Syro-Hittite cylinder, 31, the pistils are made into a separate flower on the top. On the same lines is a Graeco-Italian transformation on a gold ornament, 32.

Another change was the enlargement of the pistils in a fan form, 33, and again, 34, where the whole is made into a tree, with two bulls as supporters at the sides. This was a Hittite modification, and yet it retained the three main parts. It is interesting as being the last sight of the flower, before it passed into a very different shape.

The form 35 was long a puzzle, it looked like a bowl containing objects; but the example 34 showed the transition, and in 35 we can just trace the origins, P, A, C, of the parts. This change was the Assyrian form derived from the Hittite. From Assyria this new shape was borrowed by Cyprus (36), part of


1
MM III
KNOSSOS EPM 603
2
MM III
KNOSSOS EPM VI
3
1400
IALYSOS. FLM.V
4
LM II
KNOSSOS TAP. II.52
5
LATE HELL
KORAKOU B K.VII
6
1450
IALYSOS SAA 1926 f50
7
LATE HELL.II
KORAKOU B.K f.77
8
PACS
-1370
AMARNA
P.A XVI
9
PA
-1370
AMARNA
P.A.XVI
10
-1370
AMARNA
P.A.XVI
11
-1370
AMARNA
P.A.XVI
12
PACS
-1370
AMARNA
P.A.XVI
13
PAC
-1200?
BRACELET, LOUVRE
A.5.38
14
PA
-1370
AMARNA
P.A.XVI


15
C
-1370
AMARNA
P.A.XVIII
16
-1370
AMARNA
P.A.XVIII
17
-1370
AMARNA
P.A.XVIII
18
XVIII GUROB P.I.K.XX
19
-1370
AMARNA
P.A.XVIII
20
-1370
AMARNA
P.A.XVIII
21
-1370
AMARNA
P.A.XVIII
P
22
A
C
SACRED PLANT
HAURAN
CYLINDER
H.W.712
23
CYPRUS, CYL^R
HW. 1171
24
PERSIA BERLIN
A·O·XVIII,470
P
25
A
C
S
+780
RELIQUARY OF ALTHAEUS
BA.S. XXIII
26
VULCI
M·I·260 A
P
27
A
C
S
-50
SANCHI, C·I·P. 13
28


29
-1300? LOUVRE
30
P
A
C
SCARAB U.C.
JASPER.
31
SYRO-HITTITE CYL^R
H.W. 1015 A
32
NAPLES
N M.I.X,128
33
P
A
C
CYLINDER
D.C.O.469
34
P
A
C
HITTITE. P.A.H.26
35
P
A
C
ASSYRIAN
P.C.III, 789
K.B. 104
36
CYPRUS
P.C.III 789
K.B.104
37
CYPRUS. LOUVRE
K.B.108, D.C.P.232
38
D
? + 200
UNIT OF NECKLACE
KYRENIA CYPRUS
S.A. VIII
39
CRETE. MS, XII
40
TAMASSOS, MAK323
41
CRETE. MS·XI
42
P
A
C
CYPRUS
M.A.K. 322

the senseless jumble of styles and motives which belong to that unoriginal island. The strange dotted band across the pistils is unexplained. The loss of all sense in the use of this form is seen by its being repeated one over the other; it was probably looked on as a form of fruit dish. The old parts were put together differently on the top of an Ionic capital of Assyrian origin, 37; the dried tip of the spathe is here added to the inner side of the anther, as a finish to the spiral. The ends of the volutes of the capital turn up, and appear as a repetition of the old calyx, a mad jumble; while, on the front of the capital, the sun and moon are stuck on. Anything came handy to a Cypriote.

Another modification of the bowl motive was turning it upside down in duplication, 38. A variant of the Cypriote capital, 40, makes the calyx into the body of the capital with the pistils and anthers rising from it. Two discs from Crete (39, 41) seem to be modifications of these ideas, but they are undated; if early, they must be of some other origin. Another Cypriote freak, 42, was turning the pistils into a lotus flower, between two enormous curved anthers with tags of spathe added, and traces of calyx below; the whole is between two cranes.

This bowl pattern was borrowed from Cyprus or North Syria into Italy, in about 700 B.C., doubtless by Phoenician trade which was then active. In Italy it underwent farther changes. At Ruad in Syria we find the Cypriote piled-up form, 36, repeated as in 43. Almost exactly the form as in 37, with the inner tag, appears close to Rome (44), on the Appian way. At Falerii, forty miles north of Rome, the similar pattern, 45, is duplicated; this duplication is also on an example (47) in the Vatican (probably Roman), and formed a repeated pattern (46) at Capena near Rome.

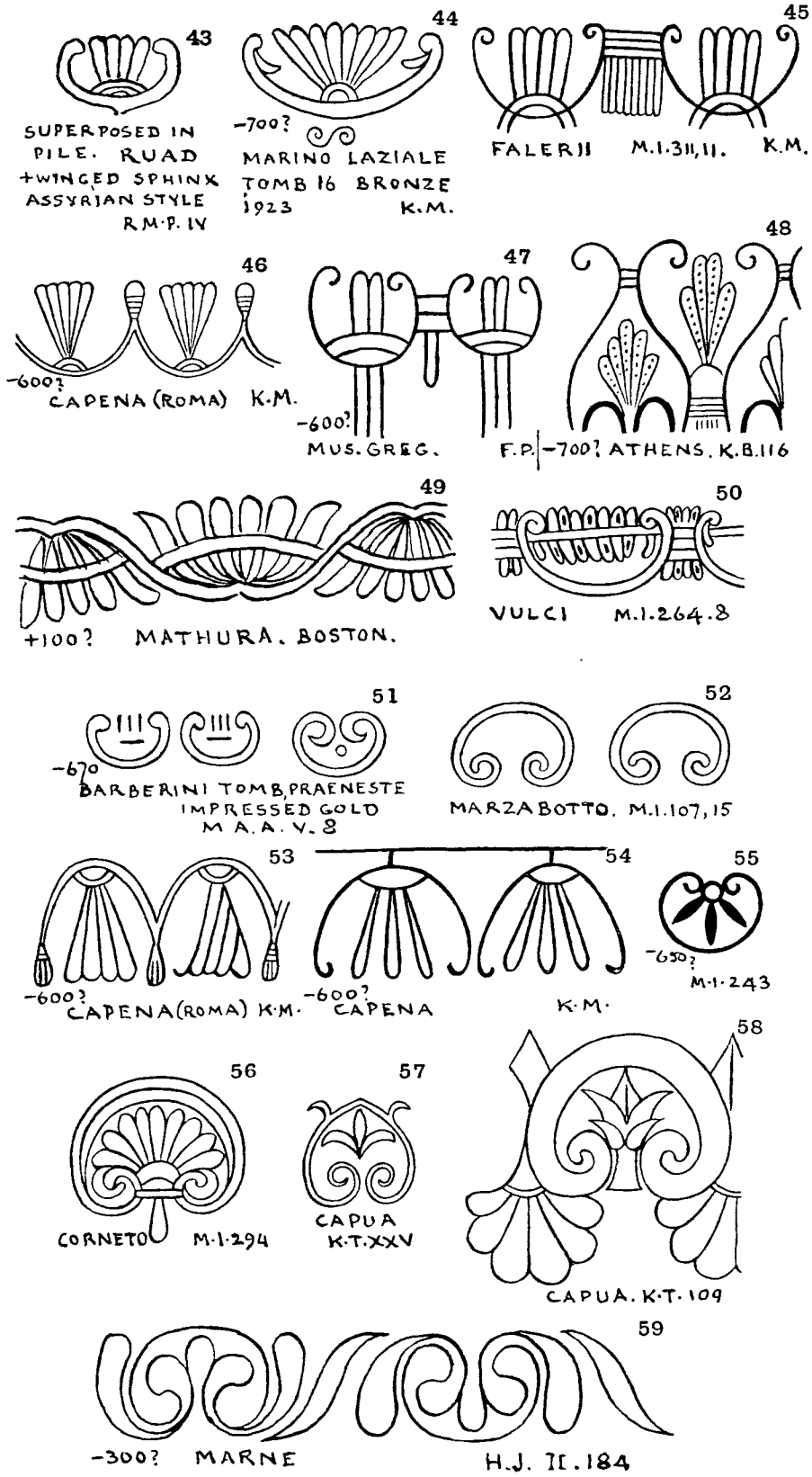
Two patterns which can hardly be separated from this stage are 48, at Athens in the same period, and 49 from Mathura, India (now in Boston Fine Arts Museum), in which the band across the group seems to connect it with Figs. 35, 36 and 50. The last named has advanced from the others and leads on to 51, where the bowl form has merely three lines and one across, detached. This comes from 20 miles east of Rome.

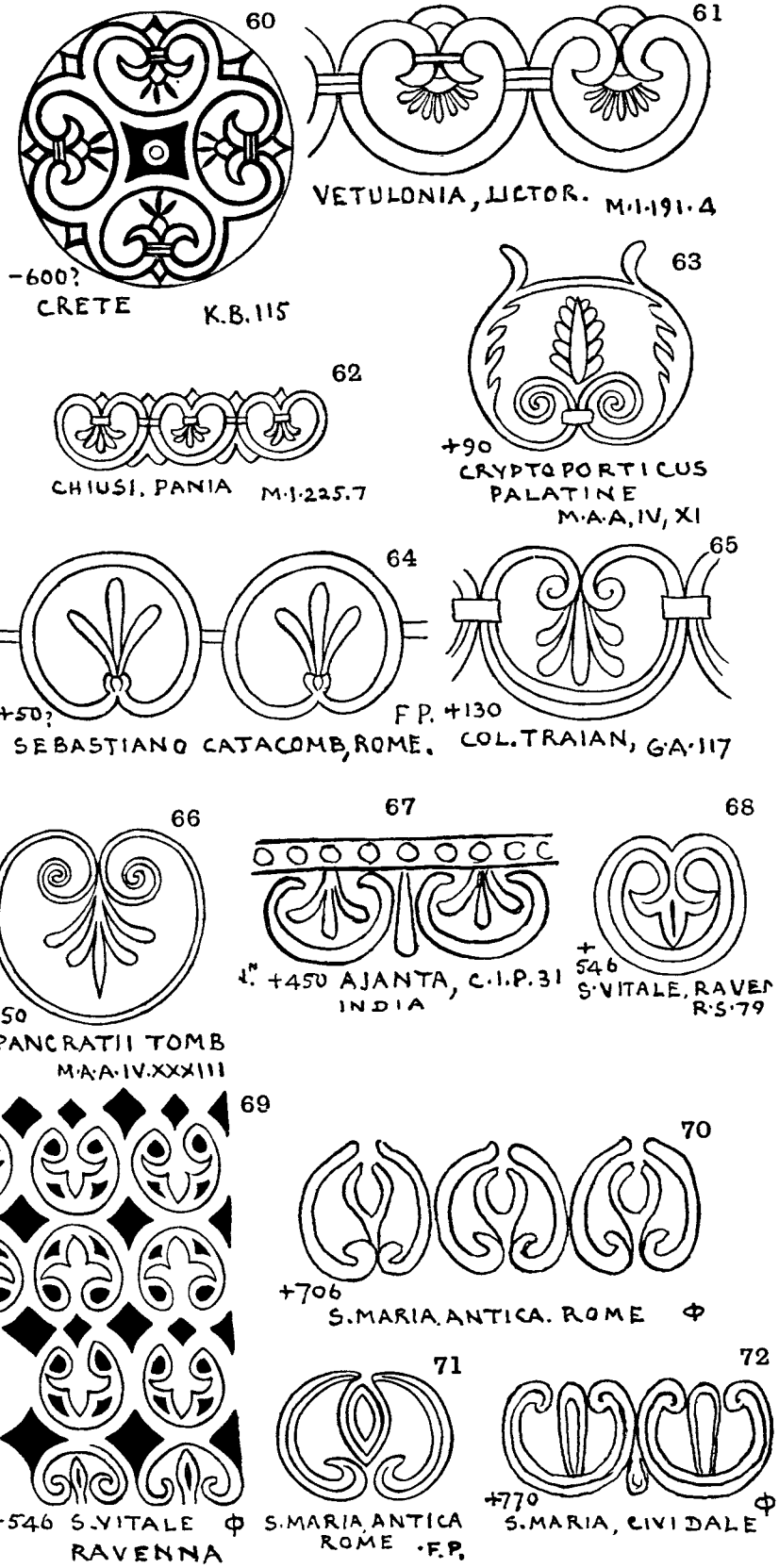
Now begins the inversion of this form; that 53 and 54 are the same subject as 45 cannot be doubted, and they are from Capena, like 46. The inverted form 52, at Marzobotto, takes the form up to Bologna, but otherwise the following examples are mostly near Rome. The design was then a Phoenician importation into Southern Etruria.

After the form was used either way up, we find more license in adding leafage to the opening, as in 56, which comes from 45 miles north of Rome, and in 57 from 100 miles south of Rome. A probable derivation, 59, appears in Northern France, long before the Roman invasion, and therefore carried by trade.

The Italian form seems to have passed back to Crete (60) in the early period, as this is inseparable from the Vetulonia example, 61, from 100 miles north of Rome. The same is found at Chiusi (62) at 80 miles north of Rome.

Passing now into well-known classical times, various forms of the same design are found about Rome; 64 is in the well-lighted catacomb of S. Sebastiano, on gesso work, of about 50 A.D.; others are on the Palatine (63), on the base of the column of Trajan (65), and in the tomb of the Pancratii (66). By Roman trade this passed out to India, and appears in the caves of Ajunta (67).


43
SUPERPOSED IN PILE. RUAD
+WINGED SPHINX
ASSYRIAN STYLE
R.M.P. IV
44
-700?
MARINO LAZIALE
TOMB 16 BRONZE
1923 K.M.
45
FALERII M.I.311,11. K.M.
46
-600?
CAPENA (ROMA) K.M.
47
-600?
MUS. GREG.
48
F.P. -700? ATHENS. K.B.116
49
+100? MATHURA. BOSTON.
50
VULCI M.I.264.8
51
-670
BARBERINI TOMB, PRAENESTE
IMPRESSED GOLD
M.A.A.V.8
52
MARZABOTTO. M.I.107,15
53
-600?
CAPENA (ROMA) K.M.
54
-600?
CAPENA
K.M.
55
-650?
M.I.243
56
CORNETO M.I.294
57
CAPUA
K.T.XXV
58
CAPUA. K.T.109
59
-300? MARNE
H.J. II.184


60
-600?
CRETE K.B.115
61
VETULONIA, HECTOR. M·I·191·4
62
CHIUSI. PANIA M·I·225.7
63
+90
CRYPTOPORTICUS
PALATINE
M·A·A, IV, XI
64
+50?
SEBASTIANO CATACOMB, ROME.
65
F.P. +130
COL. TRAIAN, G·A·117
66
+150
PANCRATII TOMB
M·A·A·IV.XXXIII
67
+450 AJANTA, C·I·P·31
INDIA
68
+546
S·VITALE, RAVEN
R·S·79
69
+546 S.VITALE Φ
RAVENNA
70
+706
S.MARIA ANTICA. ROME Φ
71
S.MARIA ANTICA
ROME ·F.P.
72
+770
S.MARIA, CIVIDALE Φ

Later still it survived at Ravenna (68, 69), and it was worn out finally in the viiith century at Rome (70, 71), and at Cividale (72), where we can bid it rest in peace, with its relics of anthers and the pistil between them still recognisable.

This series is a good example of the long persistence of a form as such, after all the sense has been knocked out of it, and how in new shapes it starts again and runs a fresh course of decay, the Lily, the Bowl, and the Foliage form. The entire independence of the lotus series is clearly marked. The lotus has no external trace of stamens, and the petals are straight. The lily, on the contrary, has everted petals, projecting pistils, and the in-curved anthers, which continue as the main element in the later period.

The dates of the earliest examples show the Cretan origin, before 2000 B.C. Coming thence to Egypt, by 1400 B.C., the idea passed to the Hittites, and on to Assyria as a tree pattern. Thence, transformed by ignorance, it reached Cyprus, and so (passing by its origin in Crete) it came by Phoenician trade to the Tiber, and spread northward from Rome, naturalized in Italy as a foliage form, and finally a senseless group of relief.

FLINDERS PETRIE.

ALEXANDER AND AMMON.

In an article on "Alexander in the Oasis," which appeared in the *Times* of Jan. 7th 1927, I suggested that the purpose with which Alexander visited Siwa was not so much religious as military. Since that article was published, the exhaustive analysis of the evidence by Dr. Ulrich Wilcken in his paper "Alexanders Zug in die Oase Siwa" (*Sitzungsb. Preuss. Akad. Wiss.* 1928, xxx) has shown that there is no substantial foundation for the idea, which has obtained some degree of acceptance, that Alexander went to secure recognition as the son of Ammon, and so to establish his divine title to the kingship of Egypt. But, while Wilcken has re-established the credit of the first chroniclers of the journey, who reported that Alexander went to consult the oracle, as any Greek might do, he does not supply an answer to the doubts which have been expressed as to whether this was a sufficient motive: and it may be worth while to examine what is implied in the statement rather more fully.

In the first place it is necessary to clear up the question of the personality of the god who was worshipped in the Oasis at the time of Alexander's visit. It has been assumed by most recent writers that the temple and cult were Egyptian, and connected with those of Amen of Thebes: but there is no monumental evidence to support this assumption. The inhabitants of the Nile valley, before the time of Alexander, seem to have known little of the Oasis—naturally enough, as the chief trade route from Siwa runs, not east to Egypt, but north to Cyrene: even the Egyptian name for the place, if there was one, has not been identified (so Professor Griffith informs me): and there are no remains of buildings of earlier date than the fourth century B.C. The first suggestion that Ammon and Amen were identical comes from Herodotus (II. 42), and his equations of Greek and Egyptian deities can hardly be claimed as scientific: there is more of importance in his statement that the inhabitants of the Oasis were a mixture of Egyptian and Ethiopian settlers, which may be founded on an actual immigration from Egypt amongst a Libyan population: a possible explanation would be that priests or worshippers of Amen, fleeing from the religious persecution of Cambyses, sought a refuge in the Oasis, and planted their own ritual in the temple of a local god. But this would not necessarily make the cult of Ammon an Egyptian one, even though it might introduce Egyptian elements.

On the other hand, there is definite evidence that the god of the Oasis was known to the Greeks before the time of Herodotus or even that of Cambyses. The legendary visits of Herakles and Perseus need not be discussed, though they may point to a traditional belief in a prehistoric connexion: but about 630 B.C. Greek colonists settled at Cyrene, at the end of the trade-route from Siwa, and they would be sure to come into touch with the natives of the interior without delay. There is not much information about the character of the worship

they would find there: presumably, as concluded by Mr. Oric Bates (Eastern Libyans, pp. 189 ff.), the god was a Libyan ram-god of some kind, since Greeks, Carthaginians, and Egyptians all later regarded him as identical with ram-gods of their own: but the form in which he was embodied in the temple was not that of a ram, but a conical stone (Curtius, iv. 7. 23), which, as Wilcken points out, shows more affinity to Greek than to Egyptian ideas, but is probably Libyan in origin, since the Carthaginians found the worship of a god whom they named Ba'al-ḥammân, suggesting that he was represented by a stone, in North Africa. The native Libyan name may have been somewhat like this in sound, and may have been similarly converted by the Greeks into Ammon, which would be appropriate for a god of the desert region as carrying a hint of sand: but there is no record of the actual form used. It can however be accepted that the Greeks who settled at Cyrene found the inhabitants of the Oasis worshipping a sacred stone, which represented a god of the sheep-flocks for which Libya was then famous, as shown by the epithet applied to it by the oracle at Delphi (Herodotus iv. 155).

These settlers, however, brought with them a god of their own who had a similar connexion with sheep-flocks—Carneius, who is represented on the coins of Cyrene as a youth with ram's horns (see Imhoof-Blumer in *Rev. Suisse de numism.* xxi. 5). His worship is best known in Laconia, where he was commonly regarded as a form of Apollo: whether he was indigenous there, or was brought by Dorian or other immigrants from more distinctively pastoral districts in the north, is an open question (see Adler in Pauly-Wissowa x. 2. 1989). It is certain that he was linked in Cyrenaica with another god, who had the same ram's horns, but was figured as an older bearded man, and known under the name of Ammon. It is quite possible that this god may also have been carried across from Greece: there are traces of the cult of a bearded horned god at several places in the Aegean area, to which it is hardly likely to have been taken from Cyrene—notably at Aphytis, in the peninsula of Pallene. The number of references to Ammon-worship in Greece in the fifth and fourth centuries B.C. is in fact so considerable that some scholars have expressed surprise at the popularity of an Egyptian deity at this period: the situation becomes easier of explanation if we assume that the conception of a protector of the flocks was indigenous in Greece, and that the only outside element was the name, which was reflected back from Cyrene, where the god had been identified with the local god of the Oasis. The form under which Ammon is represented, both in Cyrene and in Greece, is purely Greek, with a short horn of simple curl: this horn is distinct from that of either of the Egyptian ram-gods, of whom Amen has a horn doubled back downwards, and Khnum one standing out horizontally.

Whether he was originally Greek or Libyan, it is clear that Ammon was known to the Greeks as the god of the Oasis, and his temple as a centre of divination, before there is any sign of his recognition by the Egyptians. The earliest definitely historical instance of the consultation of the oracle is that by Croesus, in the middle of the sixth century B.C., the account of which implies that it was regarded by the Greeks as standing on the same level as their own temples at Delphi and Dodona, and that the connexion was therefore already well established. The references to it by Pindar and Plato carry on the same tradition: and, apart from places in Greece where the worship of

Ammon may have been indigenous, a note of Wilcken's (p. 581 note 2) shows that offerings were made to him at Athens in 367/6. In view of this, it is hardly credible that Alexander, whose interest in Greek mythology was very keen, should have thought of Ammon in any other relationship than his Greek one: and the history of this relationship strongly supports Wilcken's conclusion from the literary evidence, that Alexander visited the Oasis in the guise of a Greek consultant of the oracle.

But, if this was the case, what question did he wish to put to the god? Here we are left a free field for conjecture, as it is obvious from Arrian's statement (iii. 4. 5) that the private proceedings in the temple were not divulged: the public greeting by the priests was reported, but all we know of what happened afterwards is that Alexander consulted the oracle and told his companions that he had heard what he wanted. The question to be considered is what advice Alexander could have wanted which he would be most likely to get at Siwa: and in this connexion it has to be remembered that the most famous Greek oracles were practically bureaux where information of all kinds was collected, and many of the enquiries recorded as put to them were obviously designed to tap their stores in regard to problems involved in a prospective undertaking.

The task which Alexander had in hand was the securing of his western frontier. He had gone to Egypt, in the development of his scheme of campaign against Persia, in order to clear his right flank before advancing into the heart of his enemies' country, had occupied the Nile valley, and was engaged in preparing a garrison-town at Alexandria. While he was there, he naturally thought of what risk of attack there might be from outside the valley: and in this connexion there were two regions to be considered, Cyrene and the Libyan desert. He determined to settle this point—the closest translation of the expression used by Arrian would be the modern slang "he had an urge"—and started westwards. The problem of Cyrene was promptly solved: it was a Greek colony, and welcomed him: envoys met him at the frontier to announce their adhesion to his cause. But there still remained the desert, from which raids had come in the past, and which had swallowed up the army of Cambyses: and to investigate that it was desirable to go on to Siwa.

It has been objected to the suggestion made in my previous article that Siwa has never been of military importance. If this means as a military station, it may be granted: it would be hard to imagine any circumstances in which the occupation of the Oasis in force would assist to secure the Egyptian frontier, without an expenditure entirely out of proportion to the value of any possible results. But it is questionable whether Alexander was in possession of information which would enable him to judge on this point, at any rate when he started from Alexandria: as we have seen, the Egyptians knew little about the Oasis, and could probably tell him nothing except stories of the disaster of Cambyses: it was not till he met the Cyrenaean envoys at Paraetonium that he would be likely to get first hand particulars of the nature and situation of Siwa: and, as he had set out with the intention of going there, it would be consistent with all we know of his character to stick to his plan. Further, even if the Cyrenaeans told him how the land lay, with full details, it would reveal to him that, while the Oasis had no value as a defensive post to cover the Egyptian frontier, it was a possible basis for offensive operations by the

desert tribes against that frontier, and some measures needed to be taken to check these.

Alexander was, in fact, in a position in some respects comparable to that of the English army in Egypt in 1914: and, as we found it worth while to spend a good deal of time and money over the Sheikh of the Senoussi, it is reasonable to conjecture that he may have seen the advantage of dealing similarly with the priests of Ammon. He would learn from the Cyrenaeans that Ammon, whose oracle was so famous in Greece, was also a god of supreme authority among the Libyans, and that the priests of the temple were able to exercise influence over them: further that, while a military expedition against the Oasis was a risky undertaking, there was no great difficulty in the way of a party of pilgrims or peaceable traders going along the regular road. So, fortified by precedents, he announced his intention of proceeding to consult the oracle, and duly arrived there: what passed in the secret conference may be surmised to have consisted in an arrangement that Alexander should do honour to Ammon by a substantial offering, and that the priests should show their appreciation by preventing the tribes in their neighbourhood from raiding Egypt. This plan, if we are right in assuming it as Alexander's, was successful,—much more so than the alternative one adopted by Mehemet Ali of massacring the inhabitants of Siwa,—and the Libyans ceased to trouble Egypt for over five centuries.

The theory that the object of the expedition was primarily military (it is fair to call it military, as it formed part of a scheme of military campaign, although this particular point was won by diplomacy, not by force) and that the religious part was either incidental or accessory, seems to accord with the history of its results. So far as the immediate neighbourhood of Siwa was concerned, these were the purely political ones mentioned in the preceding paragraph: no one there seems to have taken any interest in the divinity of Alexander or to have connected him with Ammon in any act of worship. There is however little direct evidence on this point obtainable from the Oasis: but in Egypt, where more is available, it all leads to a similar conclusion. The idea of attaching importance to the sonship of Ammon which the priests had announced in their greeting to Alexander did not arise in Egypt: so far as the records show, Alexander was not worshipped in Egypt as son of Ammon or of Amen: it would probably be true to say that he was never regarded as a god by the natives in any form. There was indeed a priesthood of Alexander which was instituded by the Ptolemies, but this was merely a Greek court appointment: the names of the priests are scarcely mentioned except in the dating formulae of Ptolemaic documents, where they appear side by side with those of the priests of the reigning house, and there is no evidence that any of these priests, either of Alexander or the Ptolemies, did anything more than occupy decorative posts. The artistic representations of Alexander in Egypt, moreover, do not contain that suggestion of a connexion with Ammon which is found elsewhere: the portrait-head adopted as a coin-type there, not long after his death, is not given the ram's horn on the temple which was introduced on the coins of Lysimachus, but is covered with a cap in the form of an elephant's head: and this type, and a more realistic one without any adjuncts, were the only ones used by the Alexandrian artists.

It is at first sight rather curious that the horned type should have been first introduced in Thrace, if it arose from the greeting of the priests at Siwa:

but this really emphasizes the point that, so far as there was any religious atmosphere about Alexander's expedition to the Oasis, it was intended to make it appear Greek, and interested the Greeks much more than the Libyans or Egyptians. It must also be remembered that this type does not represent Alexander as the bearded Ammon, but as the youthful Carneius,—fittingly, of course, if Carneius was regarded as the son of Ammon,—and that Carneius was a definitely Greek deity, whose worship can be traced in the regions where Lysimachus ruled, as well as in the Peloponnesus and Cyrene. It was therefore not unnatural that when the artists of Lysimachus were told to create a portrait-type of Alexander for the coins, especially as it was an innovation to place any head except that of a god on a coin, they should mark his divinity by an emblem derived from their native Carneius, with whom Alexander could be identified on the authority of the priests of Ammon: and this type spread over the Aegean area and eastwards into the heart of Asia, though it was never officially accepted in Egypt.

Ammon did, indeed, secure some recognition in Egypt in the Graeco-Roman period: but the circumstances of this development have already been discussed in my note on "The currency reform of Ptolemy II" (*Ancient Egypt*, 1928. ii), where I suggested that it might be ascribed to the policy of Arsinoe, who knew how the connexion between Alexander and Ammon had caught the popular fancy in the kingdom of her former husband, and may have hoped that it would serve a similarly useful purpose in Egypt. She may have been shrewd enough to see that the artificial conception of Sarapis would not get hold of the Egyptians,—as in fact it never did,—and have tried to provide a substitute in Ammon as a Graeco-Egyptian god. And he did win favour: but it was not as the father of Alexander nor as a special state divinity.

If the worship of Amen as a ram-god at Thebes had any connexion with Libya, it seems more likely that the borrowing was by Egypt from the west rather than the other way. As Sir Flinders Petrie has reminded me, the great gods of the Thebaid were primarily Min and the bull of Erment, and Amen of Thebes was an intruder: and it would accord with this to assume that a wave of Libyan settlers brought with them their primitive ram-god and established him at Thebes, where political events helped him to a commanding position. But there is no trace of a continuous relationship between Thebes and Siwa in religious matters, and, if Amen was originally a Libyan immigrant in Egypt, he became Egyptianised without much delay.

J. G. Milne.

REVIEWS.

The Hittite Empire. By JOHN GARSTANG. 8vo, 364 pp., 53 pls., 45 figs., 12 maps. 1929 (Constable, 25*s*.).

Anatolia is a land of strong contrasts. Fertile beauty on the Aegean coast, and a barren salt plain in its heart, utterly dreary and bare of life; a flat sheet of rock, ending in the east with immense mountains and precipices, which make the Alps seem homely. To this wild land there pushed in from Europe a people whose language is most akin to old Latin, at about 2750 B.C. in the Neolithic times before the Early Bronze Age. They advanced until they had passed a mountain barrier and two long rivers, and then set up their capital on the watershed beyond, where they only lay open to a desolate sea, the south-east corner of the Euxine. Thus entrenched they spread out their dominion far and wide, over all Anatolia, Armenia, and North Syria; sacked Babylon in 1925 B.C., went down into Palestine, where they were a large element in Jerusalem ("thy mother was a Hittite" as Ezekiel said), sold land to Abram at Hebron, and even left their silver finger rings in the south desert at Beth-pelet. Yet these people were unknown fifty years ago, and very gradually we are learning somewhat about them.

Their capital was called Khatti, from which they had the name of Khattian or Khity (Heb.) which we render Hittite. It was founded about 2000 B.C., at about the middle of the Hyksos domination in Egypt. This influx from Europe was later paralleled by the Akhaian movement against Troy (1200 B.C.), the Kimmerian and Scythic invasion of Anatolia from Europe in 750, the Celtic attack on Pergamos and settlement in Galatia 230 B.C. and the Gothic movement in the Euxine 270 A.D. About every five centuries Europe pushed over into Asia.

The contact of Hittite and Egyptian began in the xviiith dynasty. Tarkhundaraush was sending presents to Amenhetep III, and desiring to marry an Egyptian princess. In the next reign there were more presents, and a proposal to renew the old alliance. The revolt in Syria began with an attack by chiefs of the lower Litany river upon those higher up, an attack backed by the Hittites, who took Amki ('Ammik), south-east of Beyrut (*Syria and Egypt*, p. 60). A descent of the Hittites further into Palestine may well have followed on this. In the Egyptian recovery, Horemheb and Sety I had treaties with the Khita, and Sety established Egyptian control. Ramessu II warred with them at Qedesh, without taking the city, and in the 34th year of his reign he married the daughter of the Hittite king, and poetically named his bride "Dawn," as the beginning of an age of peace.

The allies of the Hittites in attacking Egypt are listed by Prof. Garstang and the Egyptian compared with the Greek forms of the names. This Egyptian

list has been variously interpreted; writers more familiar with Greek than with Syrian geography have tried to fit on classical names, but it seems more reasonable, where place names in north Syria agree with the account, to accept them. The first form of each name here is the Egyptian, the second classical or modern. Kheta, Khity (Heb.); Naharin, Naharain; Aretu, Aradus; Masu (or Mausu), Gebel Musa near Antioch; Keshkesh, Mt. Kasios (S. of last); Pidasa, *πιδεσσα* "full of springs," in Cyprus?; Arwena, Oroanda (Pisidia); Luka, Lukioi; Derdeny, Dardaenoi, or else Durdun, Mt. N. of Issus; Qīrqash, Kirkesion; Qaīrqamesha, Karkemish; Qazauadana, Kataonia; Khilbu, Haleb (Aleppo); Akarta (Ugarit cuneiform), Gebel Okrad; Qedesh, the capital; Qedi, Phoenicia; Anaugas, the store city of Megiddo; Mushanata, Musna (40 m E. of Qedesh). Thus the Egyptian list begins with the north Syrian coast, goes west to Lycia; thence it is a long step to Dardania, and the list goes on in north Syria, making the Syrian Durdun more likely: from Syria it goes down to Phoenicia and Megiddo. The importance of the Khati is proved by their raising allies from Lycia to the Euphrates, and from Cappadocia to Haifa, and this entirely to defend Qedesh, and not as a plundering party.

The latest trace of the Khita is stated by Prof. Garstang to be the Kēteioi in the Odyssey; but there is a later local survival in the name of a district of Cilicia, Kētis, which lay along the coast opposite to Cyprus, as recorded by Ptolemy (*Ancient Egypt*, 1916, 32). Even later, an interesting question arises from a Christian gravestone of the ivth century at Ekrek (now in the Stambul Museum) which has no Greek inscription, but one in linear Hittite of debased style. It has been stated to be an older Hittite monument recarved with crosses and rosettes; but on very carefully examining it by reflected light there is no trace of erasure; it is almost impossible to suppose a great amount of work done in sinking the ground to leave crosses in relief, while leaving a pagan inscription and not cutting any Greek epitaph. It strongly suggests that in the wild hills between Tyana and Caesarea the use of Hittite hieroglyphs had survived into Christian times.

We have now looked at the general ground of the subject, and turn to note how Prof. Garstang has supplied the detail. His work deals with the empire rather than with the civilisation of the Hittites. After an historical outline, the nature of the country is described, the road system, and the communication with lands around. The site of the capital is described with plans and views, fully outlining the results of the German excavation. The rock sanctuary with its processions of figures is well illustrated in detail, and discussed. The conclusion is that it represents the divine marriage of a god and his followers, forty-two in all, with a goddess and her priestesses, twenty-one in all. Among the figures behind the god are two minor deities, and among the followers there are the high priest with the lituus and five officials, apparently the axe bearer, the scribe, and other functionaries. The end is brought up by twelve guardsmen bearing scimetars (*khepesh*). The goddess has her youthful son behind her bearing the double axe, and two goddesses of the city of the double eagle; others have no attributes.

After these central monuments the others of this age on the plateau are described. Among the sculptures of Eyuk is that of a man playing a guitar, which has numerous frets and a fiddle-shaped body pierced with ten holes. The elks with palmate horns are shown as in Siberian art. Next are described

the coast lands and Taurus range with their antiquities; the Hittite cities of north Syria, Sinjerli, Sukje-Geuzi and Carchemish. It is only at the latter that a continuous history has been traced, beginning with a long Neolithic age, followed by the building of the Hittite city at about 1800 B.C.; a second Hittite period was ended in 1200 by a great invasion from the north-west, and a third period extended to the final overthrow in 604 B.C. Other cities with Hittite remains are described, such as Qedesh, but so little has been excavated in this region that scarcely any details are known. In southern Syria there is the great site of Hazor; and remains at Beth-shan, Shechem, Jerusalem, and Beth-pelet.

The whole work is a valuable and readable account of the country and fixed monuments; it needs now equally full detail of the portable antiquities, the pottery, bronzes, weapons, seals, weights, and a statement of the results from the cuneiform Hittite literature, and of the attempts at reading the hieroglyphics. All this would give vitality to the framework which is described. Have these things been published? Have they been preserved? Has there not been a disregard of everything except sculptures and tablets? Would not a clearance of the Khatti rock sanctuary with trowel and sieve give some fresh results? It looks as if we still needed a real archaeological search of the sites; meanwhile Prof. Garstang has given us a great outline, waiting to be filled up.

Staat aus dem Stein. By H. G. EVERS. 4to. Vol. I, 117 pp., 148 pls. 40*s.* Vol. II, 129 pp., 16 pls. 30*s.* (Bruckmann, Munich), 1929.

None of the many albums of Egyptian Art that have appeared in recent years is of such critical value as this, and none so reasonable in price. Above all, the photographs have been taken in the plane of the profile, and not opposite the ear foreshortening the profile. It is entirely a study of the Middle Kingdom sculpture, covering four or five dynasties. There follows in volume I a general review of the sculpture from the beginning. In volume II is a minute analysis of the variations of all the details, with many plates and text figures. This work is, in short, a scientific study fully documented, and not merely a publisher's picture book.

The series begins with a yellow limestone statuette of a seated king, unnamed. The face is peculiarly full and wide, without thick lips (Pl. i and vol. II pl. viii). It is considered to belong to the viith–xth dynasties, but we may rule out the vii–viii period as being under Syrian kings. Another face, from Bubastis, is of the same type and expression, in II xii. This is tentatively thought to belong to mid xii, but it is not like any of that family of kings. There is some resemblance to the Mentuhetep princess pl. xi, and it might be an ancestor of that family; Mentuhetep III (ix) might belong to the same type strengthened by the finer type such as that in vii. This same type underlies the face of Amenemhat I (xvii).

A fragment of Uahka is placed here (xxi) under Senusert I, and a torso of Uahka II under Amenemhat II, without any absolute dating. But it is impossible to bring this family of Qau into the xiith dynasty. There is not one instance of the name Uahka in the xiith dynasty. Conversely there are 159 names associated with the name Uahka on steles, but only a single one of the common xiith dynasty type with Amen or Mentu. These Uahka names

are linked with the ivth–vith dynasties rather more than with the xiith–xiiith. This historic value of names is treated, with full lists, in *Ancient Egypt*, 1924, 76. The Uahka family in the xth dynasty shows its ancestry of the xiith dynasty, as a son of Uahka I was named Senusert. The physiognomy of Amenemhat I is that of the wide-faced Egyptian type (i, xvii) which is probably that of the Mentuhetep family; the Uahka ancestry of the name Senusert therefore points to Amenemhat having married a Uahka heiress, and so united the powerful Uahka family of Qau with the Mentuhetep family of Thebes. It is to be observed that the xiith dynasty in Manetho does not begin with Amenemhat but with Senusert I; his father was reckoned as being of the previous line.

We now enter on the great series of the xiith dynasty kings, and have here a better assembly than has yet been made for discussing their differences of feature. Without a large number of photographs it is impossible to demonstrate the points to be observed, but an outline of the position may be given here. The fashion of labelling every unnamed head of this age as Amenemhat III is absurd, for there is no resemblance between most of the foundlings. It is needful to require an inscription date for each head that is relied on for comparisons; many of those published with names attached have no authority of cartouches. In the following account small Roman numbers refer to vol. I of Evers.

Amenemhat I, according to his only statue (xvii Tanis) and his only relief (Koptos) was of a full-faced jovial type of the native Egyptian stock.

Senusert I was very different, and this must be ascribed to his mother of the Uahka family. His named figures are the Lisht statues (xxvii–ix), two Karnak colossi (xxxiv), the Memphis statue (xliv) and the Lisht wooden figures (xlvi). His characteristics are a wide dual chin, with a very energetic and rather severe face. From the profile and other details it seems that to him we must assign the two great Bubastite statues (cxiii–vi) and some of the Tanis sphinxes (cxxi–iii), if, indeed, these do not belong to his Uahka ancestors.

Amenemhat II was marked by a short face, large eyes, arched brow, round chin, and smiling features. The Paris sphinx (xlviii–l) is the only dated figure of him. Of undated heads there seem to be the Karnak sphinx (xxxiii), the Alexandria statue (xxxvi), and the Tanis sphinxes (cxxiv–v).

Senusert II does not seem to have remaining a single head in the round, and only a small relief (*Lahun* II xviii) gives a profile. Of the three statues attributed to him (lxiv–ix) all have been stolen by Ramessu II and none have the nose complete, so there is only conjecture for their attribution. Heads of the same type are in Berlin 17551 (cxxxiii), which agree fairly with the Lahun profile, and perhaps the Vienna bust (II xiii): the straight thin lips of the Copenhagen head (lxix) seem to descend from his mother (?) the princess from Abydos (li), and the old king with rounded sunken eyes (*Abydos* III xii) is the same man.

Senusert III has left a distracting variety of statues, at first sight very different. The harmonizing of these requires the view that he was not of strong constitution, and fell into serious illness in later life; the sunken eyes of the Medamud head (lxxxvi) and the drawn-down mouth of the Deir el Bahri figures (lxxxiii-v) show this deep-seated illness, like the mouth of the late Lord Curzon. The droop of the mouth is exaggerated in photographs taken

below the face, as the cheeks slope back from the mid line. A marked feature in the heads of later age is the puffiness in the cheek that descends diagonally from the inner corner of the eye. This is seen in the New York sphinx, the Karnak colossus (Cairo 42011), and the Deir el Bahri head (lxxxv). The earliest head is that from Medamud (lxxvii), which is far from robust; the mouth repeats the grandmother's (?) of Abydos (li). The falling in of the face is marked by the sharp angle of the cheek bone in lxxxiv.

To resume, along with the unnamed heads:—The Medamud statue is the earliest (lxxvii) with straight mouth; the Medamud fragment (lxxxvii) is rather later. The diagonal puffiness in the face follows in the Karnak colossus (lxxx–i); it shows in the Vienna head (lxxxix–xci), on one from Medamud (xcii), the Copenhagen head (cxi–ii), and the diorite sphinx (lxxviii–ix). The mouth droops in the Deir el Bahri head (lxxxiv–v), and the fish offerers (cxxix); the eyes begin to fall in and be rounded (lxxxiii); lastly the eyes become deeply sunk and round, on the Medamud head (lxxxvi), and the Hildesheim fragment (lxxxviii).

Amenemhat III has only five named statues; the youthful one from Hawara (cii–iv), two shrines from Hawara (II p. 111 and *Labyrinth* xxiii), the fine middle-aged figure from Memphis (Berlin cat. 1121), and the old figure from Karnak (cxxxi–ii). The characteristics are, a wide flat face, straight mouth, slight lips, straight nose, and a weak unenergetic expression. Closely like the Hawara figure is a head at University College (*Anc. Eg.* 1914, 43) with similar features but too narrow a jaw, and a yet more patient air of inactivity. In view of these it is hard to believe in the head from Kom el Hisn (ci), though it was found with a headless figure of Amenemhat III. But it might be a boy of 14 years who grew up to be an invalid man of 30, as in the University College head. The jaw in both is too narrow for Amenemhat III, but the resemblance to him suggests that these may be of his son Amenemhat IV. The rest of the heads which have been so thoughtlessly assigned to Amenemhat III, without any resemblance, have been here placed with the kings to whose types they most nearly approach.

The portraits of Neferhetep (cxliii) are of the same type as Amenemhat III, and much like the princess of Abydos (li) who brought in the delicate mouth to the robust early strains. Mermashau (cxlvi–viii) was of a very different breed. We here trace the types long persisting in a family, as they may be traced in the English kings. The thin ascetic type of Henry III, Edward I, II and III, was upset by the burly Flemish Philippa of Hainault. The Black Prince, Richard II, and Henry V and VI, kept the old type, but Henry IV had the Flemish type. Even later both types yet appear; Edward IV, his daughter Elizabeth and her son Henry VIII are of the Flemish type, while Richard III, Henry VII, and Elizabeth, kept up the ascetic type.

The history of the Egyptian kings shows steady decadence after Senusert I, the brilliant product of the mixture of Egyptian with the Galla Uahka. After Senusert II the family were rapidly falling off in stamina. The condition of Egypt seems to reflect the family vigour; the work under Senusert I is the finest, and the last two or three reigns did despicably.

The text of this volume deals with the general development of Egyptian Art, from the first dynasty, and discusses the plates. This is more of an abstract appreciation, without touching the questions of history, of race, of family types,

or individual lives, so that it does not add to our historical view. Unfortunately the Uahka monuments are placed too late, and the confusion of false attributions to Amenemhat III is unchecked.

The second volume is purely technical in its study of all the variations of detail, such as the alternations of colours, the forms of the head-cloth, the pig-tail, and the ribbing of the cloth. In all this detail no notice is taken of the different kinds of stone; each kind was used by its own local school, and it is likely that certain patterns would belong to different localities and be used at the same time. Certainly the style of carving was local, differing according to the material. The forms of crowns are traced, the shape of the uraeus on the head, the female hair-dressing, the beard, the necklaces, body ornaments, girdle patterns, armlets, and the position of the hands. The ox-tail dress of the king is described of various dates, the form of throne, place of inscription, the sandals, reliefs carved on thrones and the form of cartouche. The types of steles are described, and the details of sphinx forms. Lastly come remarks on the details of monuments in each reign.

All of this is elaborately done, and most useful for reference: but it covers so short a period that local varieties are likely to be more important than variety in age. This study is a first step, of which the results will not be gathered until each great period is similarly treated for comparison. We hope that Dr. Evers will carry this work forward in the other periods, and so give a full apparatus for dating.

The Composition of Judges ii, 11 to I Kings ii, 46. By HAROLD M. WIENER. 4to, 40 pp. Hinrichs, Leipzig, 1929).

The sad murder of Mr. Wiener by an Arab fanatic gives special interest to this last publication of his. It is a great loss to sane criticism that we shall have no longer his ready Hebrew and legal training for the rational judgment on the origin and compilation of ancient documents. As a friend to all research in Palestine, and to the future amenities of the parties there, he will be greatly missed.

The present study examines the composition of the historical books which record the period between the death of Joshua and the accession of Solomon. Before entering on it we may here notice the relative proportion of such writings referring to the different periods, as this bears on the date of the formation of the successive sections. The proportionate number of columns of print to each ten years is as follows:—

Judges	4·0
Saul	15·6
David	16·2
Solomon	7·7
To fall of Samaria	2·9
To fall of Jerusalem . . .	1·6

Clearly here the period of Saul and David was written up by a contemporary, as it is on even double the scale of history of the more glorious age of Solomon; the dearth of writing, later, is very marked. This seems entirely to preclude any writer in the later Monarchy for the Davidic history, and it gives further ground for accepting Mr. Wiener's position which we now proceed to summarise.

The discrepancies in the narratives of these historical books show that separate documents have been compiled, but the extreme disintegration by Ewald and others has far exceeded the evidence. The plan is noted of marking in the text such material as we should place in a footnote, by its having placed after it a repetition of the previous clause; this is like our resuming, after a digression, with "as I was saying." After these structural remarks the main narrative of Saul and David is assigned as being probably by the prophet Nathan, and is here called the N. narrative. The passages which link together by reference, by implications, and by party views, are these noted. Starting from the middle of David's reign the links are traced backward and forward, finally the N. document is listed as being composed of Jud. ix, I Sam. xvi 14–23; xviii 6–16, 20–29; xix 9–17; xxi 2–10; xxii 6–xxiii 13; xxv 16–xxviii 2; xxix–xxxi. II Sam. i 1–5, 11, 12, 17–v 3, 6–12; vi, vii, ix–xx. I Kings, i, ii. This document is apparently what is noted as the "history of Nathan the prophet" in I Chr. xxix 29; II Chr. ix 29. The history of Abimelech, in Judges, is brought in solely on account of one reference by David, which seems hardly sufficient to link it as a part of this consecutive history.

The second main source is a narrative which pays attention to Gad the seer, and may be by a follower of his. The passages are I Sam. xvii 12–31, xviii 17–19, xxi 11–xxii 5, xxiii 14–xxiv, xxviii 3–25; II Sam. viii. The difference of method in N. and G. suggests that G. wished to suppress the discreditable events, and was occupied with statements of booty and preparation for the Temple building, which had been postponed by N. G. is also hostile to the family of Saul. It is considered that this account was written between 940 and 900 B.C. in order to supersede N. Both versions are clearly Judaean, and not in the interest of Samaria.

Most of the present paper is occupied in discussing details of the additions to N. and G. The investigation of the book of Judges is very tentative; the earlier part is considered to agree best with the conditions before 750 B.C.; the later part is looked on as due to Hezekiah, some thirty years later. The whole of this is too complex and uncertain for a summary.

JOURNALS.

Zeitschrift für ägyptische Sprache. Vol. LXIII, Part 1, 1927.

JUNKER, H.—*Von der ägyptischen Baukunst des Alten Reiches.* This article consists of two lectures on O.K. architecture:

(1) *Changes in Style during the O.K.* and (2) *The development of the Gizeh Mastaba.*

The writer concludes that the original ivth dynasty type of mastaba does not represent a continuous development, but was constructed in relation to the style of the whole site, the advanced type of stone mastaba already in existence being set aside and a return made to more primitive forms. Further, that the appearance of variations within the ivth dynasty and of new forms in the following period is not to be regarded as development, but rather as a breaking-through of suppressed types. For dating purposes, any serious departure from the normal is an indication of later date, but the occurrence of certain elements alone, such as false door or serdab, affords no clue to dating. Mastabas must not be compared one with another, but must be considered in relation to the whole site in which they stand.

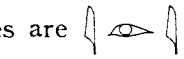
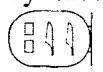
RECKLINGHAUSEN, H. v.—*Rechtsprofil und Linksprofil in der Zeichenkunst der alten Ägypter.* Why in Egyptian art was the human figure normally represented as seen from the right side, and looking towards the spectator's right? The writer finds the solution of this problem in the righthandedness of the person depicted, in conjunction with the observance of certain rules of drawing for the position of arms and legs and the avoidance of a back view and of the crossing and diminution of limbs. For the "conceptional" principles of Egyptian art could have been equally satisfied by the left profile. In cases where it is necessary to show the subject from the left side (as on the right side of a tomb door), considerations of symmetry apparently demand the holding of tools or weapons or insignia in the wrong hand. It is seen on closer scrutiny that this difficulty has been overcome, and fidelity to nature preserved, by various devices such as drawing the hand holding the object as a right hand even though it terminates a left arm; if the arm and hand match, the object may be represented as passing behind the owner's back, or a garment may be shown as worn by a person drawn from the right side.

BISSING, FR. W. v.—*Totenpapyros eines Gottesvaters des Amon.* This is a short report on a photograph of a funerary papyrus which was submitted to the writer for his opinion by a dealer.

ALT, ALBRECHT.—*Die asiatischen Gefahrzonen in den Ächtungstexten der XI. Dynastie.* Though Sethe was able to draw important historical conclusions from the names of the Egyptian rebels cursed in the M.K. texts which he published recently,[1] none can be drawn from the names of the African and Asiatic rulers in the lists, until more exact details are available from other records. The writer proceeds, therefore, from the names of places and countries mentioned. He localizes the danger zone of chiefs (*ḥḳ3·w*) and their followings in the near neighbourhood of Egypt up to and including S. Palestine. This would account for the nearest neighbour of Egypt in the xiith dynasty being *Rṯnw* (the capital of which he has elsewhere shown to be Lydda), which is not included in the danger zones; the intermediate area would have been meanwhile subdued.

STRUWE, W.—*Die Ära „ἀπὸ Μενόφρεως" und die XIX. Dynastie Manethos.* By two ingenious suggestions the writer is able to make Manetho's list for the xixth dynasty agree with the list obtained from the monuments. He holds that this much-disputed word in a passage of Theon of Alexandria is really a king's name, and that it represents Mernepthah, a name of Seti I. The name Σέθως in Manetho's list he regards as representing not Seti but  , a name for Rameses II. If *Μενόφθης* (the emendation suggested by Lepsius) is really Seti I Mernepthah, then the year 1318 falls in his reign and we thus have a new "Sothis date" for fixing the dates of the kings of the xixth dynasty.

SETHE, KURT.—*Atum als Ichneumon.*  *ʿd* (of which the early form was presumably *ʿnḏ*) is shown to be the Egyptian name for the ichneumon, an animal sacred to Atum of Heliopolis and to the Sun god, who is also called  . This animal wages war on snakes, and nearly always kills them. To this fact Sethe suggests it may owe its name, even as the Sun god may owe his name of *ʿnḏ* to his victory in the form of an ichneumon over the Apophis serpent (*see* Daressy, *Ann. du Serv.* 18, 116 ff., "Ra changed himself into an *ʿd* animal ... to fell the Apophis snake ..."). Moreover the name  for the nome of Heliopolis may have some connection with the same fact, even though *ḥḳ3 ʿnḏ* is more likely to mean "uninjured ruler" in this case than "Ruler Ichneumon."

JUNKER, H.—*Die Stele des Hofarztes Irj.* This is a full account of a stele of unusual interest which was found in 1926 in the cemetery West of the pyramid of Khufu. It had probably been brought there from another site, and its place of origin is uncertain. It may date to the end of the O.K. or even later, say xth dynasty. The interest lies in the names and titles mentioned in the inscriptions; the titles show the advanced state of medicine in Egypt at this period, as the owner was not merely a court physician but also a specialist in several branches. In the space of nine short lines of text the owner is called by three names and nine titles The names are  and   . The combined name is read by Junker as "Pepi-en-ankh whose

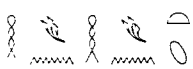
[1] *Die Ächtung feindlicher Fursten, Volker und Dinge auf altägyptischen Tongefaßscherben des Mittleren Reiches* (*Abhandlungen der Preuß. Akad., phil.-hist. Kl.*, 1926. No. 5).

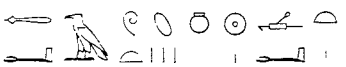
beautiful name is *Ir·in ȝḫty*," a reading which elucidates other difficult combinations. The nickname in this case is an abbreviation of the "beautiful" not the family name. Of the titles, some indicate rank or seniority; others (e.g. "court oculist," and some which are rather obscure) show that this court physician was a specialist in several branches. The latter titles indicate that there were specialists already in the O.K. in most of the departments of medicine mentioned by Herodotus (II, 84), and the author supplies one of the two missing in this stele by suggesting that  or  means dentist.

Ebbell, B.—*Die ägyptischen Krankheitsnamen.* Four more Egyptian names of diseases are identified:

13.  = gangrenous abscess (secretion) or such like.

14.  = cancer uteri.

15.  = swelling of the lymphatic glands.

16.  = Urticaria?

Kees, Hermann.—*Textkritische Kleinigkeiten.*

1. *ḫw śḏb cc. r to "curse, to condemn someone."* The writer substitutes this translation for the expression which occurs in a passage in *Admonitions* and in *The Instructions for King Merikara* respectively. (For the former passage see *Admonitions*, p. 78 and Erman, *Literatur der Ägypter* [1923], p. 145; for the latter, *J.E.A.* I, p. 26 and Erman, *op. cit.*, p. 112.) The expression also occurs in curses of the xxiind and xxvth dynasties against desecrators of tombs and monuments. In the old religious texts, particularly the Pyramid Texts (e.g. Pyr. 1299 b and 255 b–c), the expression construed with *n* has the opposite meaning of congratulate, greet, or hail.

2. *A maxim of the Heracleopolitan period.* In Pap. Petersburg 1116 A, *recto* occurs a remarkable passage to the effect that "he who is wealthy does not deal partially ... the poor man ... inclines towards the possessor of rewards." (See *J.E.A.* I, p. 26.) The same thought and some of the same phrases occur also in biographical inscriptions of the beginning of the xiith dynasty, and were obviously quoted from this maxim. Kees considers that the sentence must be older than the early years of the xiith dynasty, and that there is accordingly good support for the opinion that the Petersburg *Instructions* and other works which claim to have been written in the Heracleopolitan period actually were written then—a view which considerably affects our estimate of the xiith dynasty as the golden age of classic literature.

Czermak, Wilhelm.—*Rhythmus und Umbildung im Ägyptisch-Koptischen.* This is a lecture delivered in Hamburg in September 1926 to a meeting of Orientalists, and is extremely difficult to summarize. In his own summing-up the lecturer remarks that he has not indeed offered his audience anything really new, for it would be carrying coals to Newcastle if one were to explain what rhythm and transformation in Egyptian are. His aim was merely to indicate the value

of a synthesis which connects sense and form and interprets physiological facts psychologically, thereby animating the material with the spirit within it. Phonetics and rhythm, style, syntax, grammar, and the history of a language are indeed one at bottom and cannot be separated from the spiritual and cultural history of the race. He believes that by the method indicated some light is perhaps thrown on the position of the vowels in the individual phrases, which may increase our knowledge of grammatical forms.

TILL, WALTER.—*Bemerkungen und Ergänzungen zu den achmîmischen Textausgaben.* The following texts are dealt with in this article: Steindorff, *Die Apokalypse des Elias* (TU N.F. II, 3 a); Carl Schmidt, *Gespräche Jesu mit seinen Jüngern nach der Auferstehung* (TU Series III, vol. 13); Carl Schmidt, *Der erste Clemensbrief in altkoptischer Übersetzung* (TU Series III, vol. 2); Friedrich Rösch, *Bruchstücke des ersten Clemensbriefes*; E. Lacau, *Textes coptes en dialectes akhmimique et sahidique.*

Miscellanea.

SETHE, KURT.—*Zum Namen Pharbaithos.* Sethe here shows how *Horbeit* is derived from an Egyptian prototype  "House of Horus of the Two Eyes" = Pharbaithos.

SETHE, KURT.—*Zu Ä. Z. 62, 83 ff.* Sethe cannot accept Gunn's derivation of the word  offered in the above number of the *Zeitschrift.*

SCHOTT, SIEGFRIED.—*Die Zeremonie des Zerbrechens der roten Töpfe.* Sethe's reading of the curses on broken M.K. pots[1] enabled him to interpret a passage in the Pyramid Texts which had hitherto been unintelligible. Two parallel passages—Pyr. 113 (114) and 614 b, c (d)—are now shown to confirm this discovery. The "hard Eye of Horus" seems to be the club with which the king was to perform the symbolic act of shattering the pots, which was to terrorize the enemy.

To the above contribution Sethe appends two tomb records of the ceremony of breaking the red pots. In the light of the Pyramid Texts he shows that breaking the pots after the ceremony of offerings was intended to show enemies what their fate would be if they attempted hostilities to the dead.

L. B. E.

Bulletin of the Museum of the Fine Arts, Boston. Oct. 1929.

REISNER, G.—*Ancient Egyptian Forts at Semna and Uronarti.* There are eight of these forts from Semna to Buhen, the names of which are on a papyrus from the Ramesseum. Though noticed by travellers, none had been excavated. Dr. Reisner did Semna East, then Lt. Comm. Wheeler did Semna West, and next Uronarti. There has long been a difficulty about the high Nile records of the xiith–xiiith dynasties at Semna, as they are twenty-five feet above the

[1] (Reference given under Albrecht's article.)

present high Nile. An examination of the whole breadth of the channel shows that the breaking down of the western side, by undermining below, has made a much lower barrier; before that collapse the Nile was ponded back and stood much higher, so that it flowed through the narrows up to the levels of the records. The purpose of a record up here is supposed to be for watching the river, to regulate the time for passage of the cargo boats.

The brickwork of the forts was stabilized by building in beams; the combination of brick and timber would best prevent undermining, as the logs lie both parallel and across the walls. The water supply was protected by covered sunk gangways extending down to low Nile level. The inscriptions on the rocks have been copied, 141 in all, many of them not recorded before. The occupation in the xviiith dynasty left some remains, including two bronze menats like that in *Kahun* x, 77 but with a head of Isis in place of Sekhmet.

Palestine Exploration Fund, Quarterly Statement, Oct. 1929.

GRANT, E.—*Haverford College excavations at Beth Shemesh 1928.* The P.E.F. had worked here before the War, but had the misfortune to get on a Byzantine Convent instead of early remains. The present work was at the opposite side of the Tell. The first part was on ground outside, in order to clear space for a dump; the soil was about 14 feet deep, and reached down to a cemetery. Deep shafts descending to a cave had been filled up with burials of different ages. Hyksos cylindrical oil flasks, Egyptian alabaster and Cypriote vases of mid xviiith dynasty, Philistine bowls of rather later date, all came out from successive burials and are figured here. Scarabs were found, but are not illustrated here. In the town an earlier burial cave was found under the floor of a house and stretching under the city wall, apparently early Hyksos by the account.

CROWFOOT, J. W.—*Discovery of a Synagogue at Jerash.* During the clearance of the early churches there was found, beneath one, a synagogue pavement. The Hebrew inscription in the mosaic named the benefactors, but no date is stated; it must have been before 530 A.D. the date of the superimposed church.

GARROD, D.—*Excavations in the Mugharet-el-Wad near Athlit.* This cave promises to give a stratified series of deposits. A microlith group was found with skeletons,—four adult, six children. Under that a Mousterian group which extended over all the chamber. In the microlith group was found a pebble roughly carved as a human head. In the inner chamber were strata, of Bronze Age to recent 60 C.M., Microlithic 10 C.M., Upper Palaeolithic III 70 C.M., Middle Aurignacian 80 C.M., Upper Palaeolithic I 40 C.M., Mousterian, depth unknown.

Comptes Rendus. 1929, Jan.–March.

VALLOIS, R.—*Temple Délien d'Arsinoé Philadelphe.* Oenochoes are found, bearing a figure pouring libation on an altar, and the name of an Egyptian queen, from Arsinoe Philadelphos to Berenike II. Athenaeus states that Ptolemy made portraits of Arsinoe. The various offerings in the temple are recorded in the inventories of 156–146 B.C.

April–June.

The excavations of Herr Sellin at Shechem have discovered a rampart guarding two palaces, with large gateways, and a temple. The plan recalls Hittite work at Carchemish and Zinjerli. The date is about 1900–1200 B.C.; over that is an Israelite stratum of 1200–600 B.C. and Hellenistic houses of 300–50 B.C.

p. 90. The work at Byblos in the spring of 1928 is considered to show that the temple which is represented on a coin of Macrinus is not that now known, but was a purely Roman temple. Near the early temple is a grotto which was doubtless the primitive sanctuary.

The Oriental Institute of the University of Chicago.

1. A " general circular No. 2 " has appeared, giving an account of the various works due to the enterprise of Prof. Breasted. The Oriental Institute, like the British Museum, has been profiting by the leakage from the French work in Syria, probably from Byblos. A fine pectoral of Amenemhat III and " other fine examples of the goldsmith's art " are now in Chicago. The gifts of American millionaires result in the great library and institute for students at Luxor, the vast clearance of Megiddo in Palestine, the prehistoric survey in Egypt and western Asia, a Mesopotamian, and a Hittite expedition. When we see English millionaires leaving half their wealth to be seized by the Treasury, one regrets their blindness in not using it for researches during their lifetime.

The paintings of the 1st century at Dura, unique in the history of art, have now been destroyed by the Arabs, and only survive in the American publication. The Prehistoric Survey has been at work up the Nile, Mr. Sandford continuing the research which he began for our British School in Egypt. At Thebes the sculptures of the only complete temple, that of Rameses III at Medinet Habu, are being copied by drawing over a photographic basis. The publication of this is expected to fill six volumes. The plan of the palace of Rameses III, adjoining the temple, has been cleared. Another enterprise is the copying of all the early religious texts from wooden coffins.

The Megiddo expedition has happily passed into the direction of Mr. Guy, formerly of the Palestine Museum, who is conscientiously keeping his large staff on preparing publication of what has been already done, before excavating further. The deplorable lack of publication of American work will at least be redeemed at this most important site. Nearly half of it is bared down to the level of Solomon's great stables; all the history of the Canaanite civilisation will be the work of the next generation. The Hittite expedition is working out a great *tell* which provides a series of the successive periods, and will thus give a foundation for Hittite archaeology.

The Central Institute at Chicago is undertaking a complete Assyrian dictionary, and also preparing material for a critical Syriac version of the Old Testament, as being a valuable check on the transmission of the Hebrew. We can but rejoice to see so much needful work being so fully carried on; but what of England? The British School in Jerusalem is denuded of its government support of £500 a year, not a tenth of what it should have, and can scarcely survive; our own British School of Egyptian Archaeology must reduce its output in future if the bare expenses of its workers are not provided.

2. Explorations in Hittite Asia Minor. By. H. H. VON DER OSTEN. 104 pp. 1927. The author during a summer searched over the heart of the Hittite Empire with a motor car. This was done for seeking Hittite settlements, which are dated by the fragments of pottery on the surface. In the town mounds there are usually six or seven periods, superposed, dating from before 2000 B.C. The principal guides to sites were the various names of ruins. An Egyptian statuette of a Middle Kingdom vezier was found. The region inland from Amisus (Samsun) was fairly covered, and a hundred photographs are given, mostly of sites and remains. Everywhere the Turkish authorities were helpful, and "there are few places in the world where one can travel as safely as in Anatolia."

3. First report of the Prehistoric Survey Expedition. By K. S. SANDFORD and W. J. ARKELL. 52 pp. 1928. Dr. Sandford's work for the British School had brought to light the various high level terraces of the Nile; at 100 feet over the present river lie the Chellean implements, at 50 feet the Acheulian, at 30 down to 10 feet the Mousterian, curiously like the levels of such flint work in the Thames valley. After this discovery for our School Dr. Sandford was engaged by the Chicago Institute to continue prehistoric researches.

The filling up of the valleys at Thebes to 300 feet above the river is described as evidence of the extent of the Nile estuary at that level, as previously figured in *Ancient Egypt* 1915, pp. 129, 131. It is interesting to see fully accepted the parallelism of the European and the Egyptian series of flint types, which was looked on as a rash assumption ten years ago. Our latest work has produced types in South Palestine absolutely similar to those in Norfolk.

The report of Chicago work is occupied with the difficulties and accidents of driving two cars from Cairo to Aswan, and back to Qeneh and the Red Sea, ending up at Thebes. The important fact of finding worked flint flakes in gravels on the Red Sea coast is stated; but all other results appear to be reserved from the public.

4. The Excavation of Armageddon. By CLARENCE S. FISHER. 78 pp. 1929. This great enterprise of the clearance of the site of Megiddo will probably occupy thirty or forty years. It has been begun on a large scale, and the volumes of results now in preparation will deal with about a sixth of the site during the ages from 900 to 300 B.C.

The first stage was the clearance of part of the cemetery area at the foot of the mound, in order to provide ground for dumping the earth removed from the mound. In the course of this some cave tombs were found, in one which were twenty-eight scarabs of late Hyksos age. One third of them are identical with types found at Beth-pelet; they are rather diverse in period, which may be expected, as the cave was over thirty feet across (now entirely collapsed), and it was doubtless used during a long period and contained many graves. Another tomb contained ledge-handle jars of the earlier period.

This part of the cemetery being cleared, the earth removed from the hill could be shot down on to it, and a large dump heap is being formed. Eventually the whole depth of ruins on the hill will have to be spread out around it, down to the level of the natural top of the hill. The area now cleared is about a fifth of the hill top, or a seventh of the area lower down, and perhaps a quarter of the depth has been removed. The cleared area is bare down to

the great stables of Solomon. These are buildings, each with a broad paved gangway down the middle, where chariots could be stacked. On either side are a dozen stone pillars for tethering horses which stood outside of the gangway; and between the pillars are stone troughs all along, for feeding the horses. The great interest of the place will appear when the levels of the flourishing age of 1500 B.C. are opened.

5. NELSON, H. H. Medinet Habu 1924–8. } This is an account of the systematic
HOELSCHER, W. Architectural Survey. } copying of the great sculptures on the temple. Photographs are taken, then enlarged as blue prints; these prints are then compared with the sculpture and pencilled. The outlines are drawn in ink, the paper is bleached, and blue prints are made from the ink drawing. These can then be checked over in detail by the epigraphers at the wall. When revision is ended there is as complete a copy as can now be obtained. Dr. Nelson, the chief, has eleven assistants beside native boys. In addition there is a survey department of Prof. Hoelscher and two assistants, so that fifteen skilled workers are on the site. Research has grown since the days at "Medum" where one worker had to fulfil all details of facsimile copying and excavating, but only America will afford such staffs. The great Rosenwald library at Thebes is an invaluable aid to workers there.

An outline is given here of the historical crisis in the Mediterranean at the time of Ramessu III. The general account of the walls and sculptures describes the presence of painting on the sheltered parts [there were traces in 1887 on the captives at the front], which had supplied much detail that is now lost on the outer walls. The frequent changes by artists after the carving was done, are now all revealed by the plaster dropping away, in fact the deleted version will have to be separated from the final version.

The survey of the adjacent ground has cleared up the plans of two successive palaces on the south side of the temple; the later one was spaced more widely, and was loftier, within the same outer walls. It also had external entrances east and west, beside the old entrances from the temple court.

Mémoires Soc. Roy. Antiquaires du Nord. Copenhagen, 1928.

NIELSEN, NIELS.—*Production de Fer en Islande dans les temps anciens.* A long article describing the primitive production of iron should be mentioned as reflecting on early Oriental iron. Forty-six factories have been recorded or found in Iceland, nearly all on the north and west, where limonite (hydrous haematite) is to be obtained. The fuel was mostly charcoal from brushwood of birch; such is now made by burning in pits. The smelting was done in open pits or in pots. A tuyere of iron was found, 11 inches long, $2\frac{1}{2}$ wide tapering to 0·6 inch; it was made by rolling up a sheet of iron about $\frac{1}{16}$ inch thick. [It was probably the nozzle of a forge bellows.]

The pit was about 18 inches cube, lined with rough stones, mortared with clay, having a cobble paving around it. At the bottom lay 3 inches of birch charcoal, and over that 6 inches of slag and charcoal. There was no trace of a blast hole. Whether the charcoal was made apart, or carbonized in the pit is not known. This pit production is similar to the method in Palestine of 1150 B.C. (*Gerar*, p. 14, vi), but there the furnace was 66 × 36 inches, and had an opening near the base facing the west wind. It would thus be much more

effective than the Iceland pit, as well as holding about twenty times as much, and so keeping its heat better. The pot, or flat crucible, was 4 or 5 inches wide and $1\frac{1}{2}$ deep. Similar pots were used in Jutland, and therefore, no doubt, by Jutes in England. The scale of working was considerable, many piles of slag amounting to 500 tons. The reduced iron was forged to beat out the slag entangled in it; a lump found was $3 \times 2 \times 0{\cdot}4$ inches. Both iron and stone hammers were used. A square anvil of iron was 8 inches high, with a face 12×7 inches. The pit furnace is the earlier type and one generally used in the north down to 1000 A.D. A large quantity of iron was needed for the weapons, chain-mail, and nails for building houses and ships.

Fornvännen. 1929, 3 (Stockholm).

LENNART VON POST.—*Pollenanalytisk undersökning.* An important method of research has been used in excavations at Höganäs in Sweden, 30 miles N. of Copenhagen. Throughout 8 feet of deposits the sand and earth was taken in 4-inch layers, in each of which the pollen grains were counted and discriminated by the microscope. Thus the waxing and waning of each kind of tree has been traced during a long period. The changes in the growth of birch, elm, oak, alder, hazel, willow, pine, pitch pine, and lime have been thus measured, and the total fertility of each age is shown by the total amount of pollen, sometimes more than double of what it is at other times.

NOTES AND NEWS.

BRITISH SCHOOL OF EGYPTIAN ARCHAEOLOGY.

The coming season of excavation at Beth-pelet will, it is hoped, finish the search of the Hyksos cemetery, which is so important for the history of Egypt. The large building of the age of Solomon which was touched last year will be cleared. The part of the town by the fort of the early xviiith dynasty found in 1928 will be cleared to the base. Also the west side of the fortification fosse, where the large tomb of the xviiith dynasty was found, will be examined rather further; but the depth of twenty feet of sand is so costly to remove that not much can be done there. The neolithic and palaeolithic discoveries will be carried further.

The staff will be Mr. Starkey and Mr. Harding who have worked each year in our Palestine enterprise, also Mr. Colt from last year. Mr. Myers has been prevented from going, by his health; when recovered, he will be due to work for the Egypt Exploration Society. His place for searching the important neolithic sites will be taken by Mr. Macdonald who has had geological experience, as well as working at Richboro'. The Director will be occupied with writing at Rome, and go over to Palestine if required. Lady Petrie has been actively engaged in improving the finances of the School, and will be thus occupied this winter. Without incessant exertion to obtain support in England, the work in Egypt over the Border would be greatly reduced. Fresh contributors are urgently needed.

The neolithic settlements around Beth-pelet are of great value, as they cover various degrees of civilisation, and are in one stage linked with the oldest, Tasian, stage of prehistoric Egypt, and at the end join in to the flint work of the Israelites during the age of Judges. Overlapping thus both the bronze and earliest iron ages the series of settlements promises to give a continuous history over a long period.

Enquiry has been made by Mr. Lucas about a sulphur mine near our work. It is in the marl, above the Wady M'shebba, six miles south of Gaza, and is at present under European management.

Mr. Myers will be occupied on the cemetery of the sacred bulls at Erment. Dr. Frankfort is now engaged for the American excavations in Iraq.

The further raising of the Aswan dam, which has been decided, will flood Nubia to a wider extent. This has led the Egyptian government to extend the former survey of antiquities in Nubia, before the Nile covers more ground. For this survey Mr. Emery has been put in charge, and is to be assisted by Mr. Kirwen, who has for some years studied at University College, and worked with Mr. Brunton.

Professor and Mrs. Griffith are engaged in studying the Demotic graffiti on the temples at Philae.

Professor Newberry is now occupied in teaching Egyptian Archaeology in the University of Cairo.

Mr. Firth continues the great task of clearing the works of Zeser at Saqqarah. The very serious question of preservation will arise, for re-burial of monuments is often the only way to preserve stone from weathering, or the future destruction by ignorance.

Dr. Junker is now appointed Director of the German Institute in Cairo; his meticulous reports on the early sites which he has excavated are a guarantee that good results may be expected from his management.

The fluctuations of Arabic writing have been well overcome in linotype, which severely limits the number of ligatures; every letter is formed to end on a uniform base level, and the junctions are imperceptible. The sizes vary between 7 letters or 18 letters to the inch. The Mergenthaler Linotype Co. of Brooklyn N.Y. have issued a full description.

THE COPPER AXE.

THE axe, the foremost of implements, is the only document of the past which has preserved an unbroken connection between the vastly remote world of early Man and the living world of the present day: whether as a tool or weapon, a form of currency, a standard of weight, or a symbol of authority, the axe is never wholly absent from Man's equipment.

The stone hand axe belongs to a timeless age of which the periods are marked by the slowly changing face of the axe itself. The copper axe, by comparison, is modern, and appears only when the province of predatory Man has already been invaded by Man the producer. Tillage, with implements of wood and stone, brought civic life to a savage and nomadic world; copper implements brought craftsmanship into the world, and placed in the scales of commerce a wealth of chattels in exchange for the products of agriculture.

The earliest agricultural squatters possessed copper in trifling quantities, but one may doubt whether they understood the fusible nature of copper, or whether they made any reasoned distinction between metal and certain attractively coloured stones.

Traces of copper, chiefly pins, needles and bodkins, hammered out of native metal, are found in the debris of the earliest agricultural settlements of the Nile Valley but it was only with the arrival of the dynastic people and within a generation of Mena that copper began to be freely used in Egypt.[1]

Small objects from the deepest levels of Al-Ubaid show that copper was not unknown to the early marsh dwellers of the Mesopotamian delta, but here again there was no real appreciation of metal until after the incoming of the Sumerian invaders.[2]

The first copper tools of the Ancient East were found on the site of Susa, the first agricultural settlement of Elam. Here, for the first time there is such a wealth of metal that copper axes can be included in the fine equipment of the men, and copper mirrors in the furniture of the women's graves. From Susa the use of the copper axe spread eventually into Egypt but it failed, for some unknown reason, to penetrate eastwards beyond the line of the Zagros range.

The recently discovered neolithic settlements of Damghan and Persepolis on the Persian plateau show no traces of metal in any form.[3] Yet despite the pronouncement of the excavator, they attest a more recent and more advanced civilisation than that of the first period of Susa.

North and east of Damghan is another neolithic settlement which evidences the furthest advance of Sergi's Mediterranean race.[4] The occupation of Anau

[1] *Tools and Weapons* (Petrie).

[2] *The Sumerians* (Woolley).

[3] *Prehistoric Persia* (Herzfeld). Illust. London News (25-2-29).

[4] *Explorations in Turkestan* (R. Pumpelly), Washington.

was certainly not earlier than that of Susa, yet neither at this time nor during many succeeding centuries were copper implements known to the Anau-li.

In Susa, on the contrary, there is no scarcity of copper from the first; the tools are already of an advanced "metal-form" type and every tool is specialised for the particular function it has to perform.

The foremost copper implements of Susa were axes (Fig. 1), stout blades of oval section and designed for hewing and splitting timber. Strength is given where needed and the edges are reduced, like those of a modern Canada axe, to give easy penetration and quick release. These axe blades vary in length from $3\frac{1}{2}$ inches upwards, the largest being $8\frac{1}{2}$ inches by $3\frac{1}{4}$ inches by $\frac{5}{8}$ inch.

Spatulate axe blades are less common (Fig. 2); the narrow butt is easy to fix in the stock and there is also a certain economy of metal.

No example of a wooden axe stock has been preserved; the sketch of a mounted axe (Fig. 3) is consequently hypothetical.

Thinner tools, similar in outline to the plain axe blades but much lighter in build (Fig. 6), must be classed as adzes, despite the centralised cutting edge. The practice of "side-cannelling" adzes, so as to bring the cutting edge flush with the working face, had not yet been invented. This technical refinement made an eventual appearance in the copper culture of the Old Kingdom of Egypt.

The adze is a shaping, rather than a hewing, implement and is liable to no such severe strains as an axe: the use of a lighter and keener blade is consequently possible. The wood stock of the adze (Fig. 7) is, again, hypothetical.

A longer and narrower type of tool, which the excavator includes, with the foregoing, under the comprehensive term of "Haches," is obviously a wood-cutting chisel (Fig. 9). The style of handling is shown in Fig. 10.

The two smaller chisels (Figs. 5 and 8) were probably used without handles, and may have been employed, inter alia, for cutting the mortise holes in the axe stocks.

The last object (Fig. 4) is an eyed copper needle, not unlike a modern sacking needle.

These tools have been described as "primitive," but they illustrate, in fact, a comparatively advanced stage of the coppersmiths' craft.

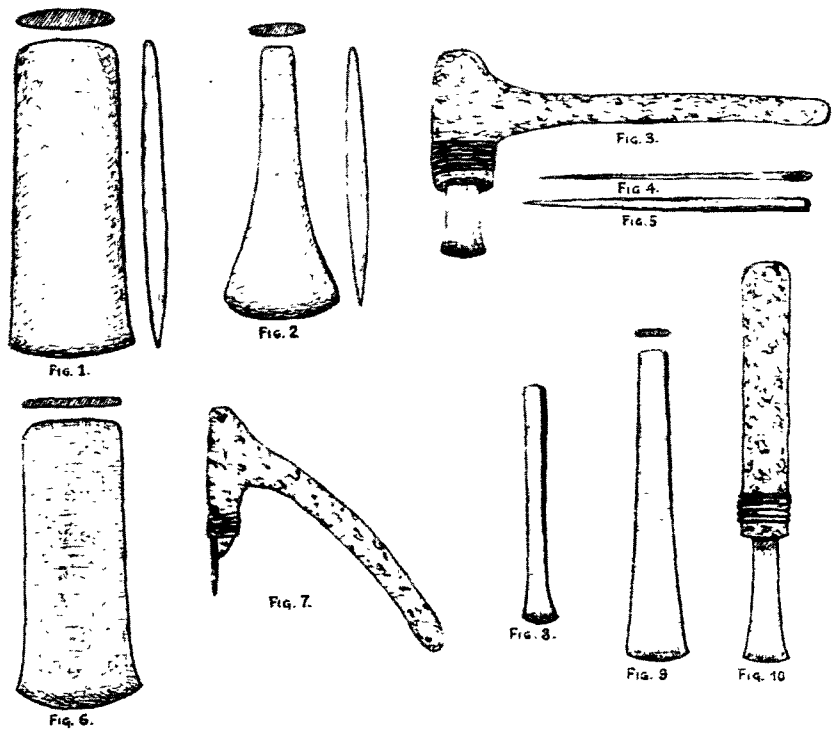
In the first process—casting—the copper must have been heated in some form of clay crucible until a sufficiently liquid "melt" was obtained, the fuel being wood and the hearth an open one, built with due regard to the prevailing wind. The molten metal was "teemed" into open moulds of clay or stone, and the resulting rough tools or "moods" were then "smithed" with hammer stones upon a hard stone anvil. In the absence of smith's tongs (a much later invention) cold forging was a necessity. It was a slow process but was responsible for a highly important discovery.

Copper, naturally soft and pliable, was found to become harder and more rigid as cold hammering proceeded,—an eminently desirable condition in any tool which has to carry a cutting edge. Under prolonged hammering, however, an undesirable condition supervened; the metal lost its natural tenacity and became "cold-short" or brittle, and for the time useless.

A remedy was eventually found in the regenerative process known today as annealing: it is a simple process but like the foregoing operations it had to be discovered.

Thin objects such as the disc mirrors from the women's graves, which had to be reduced by hammering to a gauge of no more than one sixteenth of an inch, must have undergone many repetitions of the annealing process before the forging and planishing operations were completed.

The owners of these tools were farmers, as were the owners of the first copper tools of Sumer and Egypt, a circumstance which has given rise to the widely held belief that farmers were "the discoverers of metals and the first metallurgists."[1] But does this connection accord with what is known of the earliest traditions of metal working: are the two activities compatible; is agricultural land a likely environment for the finding of copper?



None of these questions can be answered in the affirmative. Metal might be present on agricultural land but it would not be noticeable; even if seen, it would be unlikely to excite speculative interest among a people who were engaged in the arduous labours of tillage.

Such activities as basket-making, weaving and pot-making are traditional to neolithic agriculture; they were occupations rather than crafts. To the women folk of these early days the kneading of clay and the firing of pottery were as much matters of household routine as the preparation of food and the baking of bread. Thin pottery, such as occurs at Susa, is too delicate a fabric to bear transportation—a sufficient proof that the Susan pottery was made *in situ*.

It is different with metal. Copper working has always been a specialised craft, and copper axes a recognised medium of exchange.

[1] *The Metals in Antiquity* (Wm. Gowland's, Huxley Lecture, 1912.

The metal workers of Asia are a class to themselves. In Syria they are known as "Sleybie" or es Sleyb, in Arabia as "Soluby"; they are men of the hills, wandering folk of no recognised nationality. They adopt the language and profess the religion of the people among whom they sojourn, but their own language, their ancient traditions and beliefs they keep strictly to themselves.

The vast migratory movement which brought out of the distant East the people who were to build Susa and to found, eventually, the Old Kingdom of Egypt may conceivably have been accompanied by the copper axe makers—but it is definitely unlikely. Probability suggests that the "proto-Sleybie" were already long established as cave dwellers in the Ararat-Zagros mountain massif, where natural clefts in the rocks would supply ready-made metallurgical furnaces. It requires no great stretch of the imagination to see these people trading copper axes at the gates of Susa.

The pre-history of the first discovery of copper forms a series of problems for which no immediate answer can be found. What kind of metal was first melted into axes; was it native metal or was it smelted from ore; in the latter case, from what kind of ore?

So far as the Susan axes are concerned, the field of enquiry has been narrowed, recently, by chemical analysis. A copper axe from a deep level of the Tell of Susa shows 99·12 *per cent* pure copper with a trace only of nickel and no other metals, the difference from 100 being due to oxidation.[1] The chief interest in this result lies in the fact that we can find no more than two possible sources from which this particular grade of copper can have been obtained: (a) from native copper, (b) from malachite—a hydrated carbonate of copper. None of the oxide or sulphide ores would supply a metal which approaches this standard of purity.

Malachite is the richest and purest of copper ores and occurs at the outcrop of copper deposits. It was valued as a pigment long before the dawn of the metal age,—a fact which may account for its present scarcity throughout the Near East, and for the early discovery and entire absence of the underlying native copper.

If the makers of the Susan edged tools were using malachite, as they may have done (since malachite is easily reducible in an open fire) they must have found an exceptionally pure malachite. If they were using native copper they must have had access to a deposit with a higher standard of purity than that of any sample of Asiatic copper that has been subjected to analysis.

The only certainty is that one or the other was used: the answer to the final question, which of the two? depends upon further chemical and spectroscopic research.

[1] Analysis by Prof. C. M. Desch, F.R.S., to whom I am indebted for these particulars.

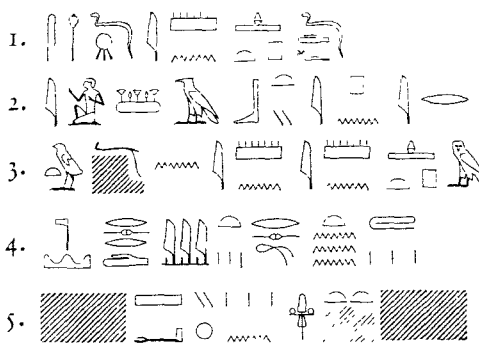
E. A. Marples.

SOME UNPUBLISHED EGYPTIAN OBJECTS FROM KERTCH, OLBIA AND TIFLIS.

In *Ancient Egypt* 1926, Part III, there were published by two authors[1] some Egyptian objects found in the South of Russia, and particularly in the region of the northern coast of the Black Sea. The interest which is shown towards such finds induces us to publish some objects which formed a part of the Botkin, Burachkoff, and Schukin collections, and are at present in the State Historical Museum in Moskau.

The first objects, six in number (see Fig. 1), were found in Kertch (ancient Panticapeion). We have not been able to find out more detailed circumstances in connection with their discovery. Of these objects two are ushebties, two scarabs, an amulet in the form of a lion, and a small figure of Ptah-Patek.

The first ushebty (see Fig. 1, a), of 9·3 cm. high, is of yellow-white clay covered with white facing. The hair, beard, the eyes and the eyebrows are painted in black. The eye-holes are filled with white colour. The body of the ushebty is surrounded by a hieroglyphic inscription in five horizontal lines:[2]



1. Let Amenhotep be enlightened! Says he:
2. O ushebty, this, if decreed
3. [the intendant[3] of the temple] of Amen Amenhotep in the
4. necropolis, to plough the fields, to irrigate the banks
5. [to carry] sand[4] of the east to west...

The second ushebty (see Fig. 1, b), of 13·7 cm. high, is of light-green paste. He is also in the form of a mummy, with a pilaster behind him. From the hands descends one line of inscription of impressed hieroglyphs; the signs have vaguely spread, and leave various possibilities of reading. The inscription represents the usual formula of ushebties beginning with *šḫd*. Two scarabs of light-green paste bear on their lower parts the following inscriptions: the bigger one (see Fig. 1, c), of 1·7 cm. high,—two sacred eyes *wḏ3*, *nb*—gold, two signs of life—*ʿnḫ* and between them *nfr*—beautiful; the smaller one (see Fig. 1, d), of 1·4 cm. high, *nb*—gold, a spiral and *nb*—the lord.

[1] A. Zakharow, *Ostride Fragment from South Russia*, and M. Matthieu, *Scarabs from South Russia*.

[2] The lower part of the ushebti being broken off, only five lines are left to us.

[3] Here we restore the common title  , translated by Fl. Petrie as "intendant." See Fl. Petrie, "Palace Titles" (*Ancient Egypt*, 1924, p. IV).

[4] L. Keimer translates it as "Mergelsand" (see "Das Sandfahren der Totenfiguren" in *O.L.Z.* 1926, No. 2, p. 98).

The amulet of a couchant lion (see Fig. 1, e) is similar to that found in Olbia.[1] The standing figure (see Fig. 1, f) belongs to the wide-spread form[2] of the Memphite god Ptah-Patek.

Of the six above-mentioned objects the most interesting is, of course, the first ushebty (see Fig. 1, a), as this is the first time that an Egyptian object of the New Kingdom has been found on the territory of Russia; although its appearance in the surrounding of amulets and ushebty, common to the Egyptian export of magical objects of the epoch of Hellenism, makes it of course impossible to vouch for any earlier date of its importation to the Cimmerian Bosphorus. The earlier finds, together with the material in the present note, put Panticapeion first among the Hellenic towns of the South Russia, for the quantity and variety of the Egyptian objects found there. And indeed, the past productions give us nearly all the chief gods of the Egyptian Pantheon;[3] the scarabs represent Naukratite types, of which one bears the name of Thothmes III and the image of the king trampling down his enemies.[4] The ushebties of the latest times[5] are added to, as we mentioned above, by the ushebty of the New Kingdom. The vases are given us by the excavations of Shcorpil.[6] This incomplete list we conclude with the mention of a beautiful flat head of a king which probably formed a part of an incrustation, and of a sculptured royal head of black granite from the excavations in the Voronzoff street.[7]

Now we can say that Panticapeion, this most important centre connecting the historical cultures of the Mediterranean with the ethnic elements of South Eastern Europe and Asia, stands in the same rank as Olbia and Berezan island in the trade relations of Hellenic Egypt with the South of Russia.

Another ushebty of 11 cm. high (see Fig. 2, a) was found near Olbia. It is of light-green paste, and like all late ushebties has a pilaster behind it. From the hands descends a column of impressed hieroglyphs.

"The speech of Osiris Dî-Hrw born of W3"

[1] See *Revue*. Série 4, v. XVIII, 1911, p. 23, Fig. 5 (B. Touraieff, "Objets égyptiens et égyptisants trouvés dans la Russie Méridionale").

[2] From the territory of Russia three specimens have come down to us: two from Kertch (see *R.A.*, Série 4, v. XVIII, pp. 25–26, Figs. 12–13) and one from Olbia (*Ibid.*, p. 24, Fig. 21).

[3] See *R.A.*, *Ibid.*, pp. 29–29.

[4] *Ibid.*, p. 26.

[5] *Ibid.*, pp. 27–28.

[6] Now in the collection of the South Russian Department of the Museum of the Ermitage.

[7] Also in the Ermitage collections.

From the collection of Schukin comes a small pendant in the form of the standing god Nofrtum (see Fig. 2, b—enlarged to double). It was found near Tiflis and brought thence by Schukin at the time of his travels about the Caucasus. Together with finds in Dalagkan and Kamounta, this pendant shows another route of the expansion of Egypt to Russia, but probably not by way of Syria and Armenia.

In conclusion I wish to express my obligation to the State Historical Museum in the person of Prof. A. A. Zaharoff, for kindly permitting the publication of these objects.

Leningrad, September 1929.

I Sneguireff.

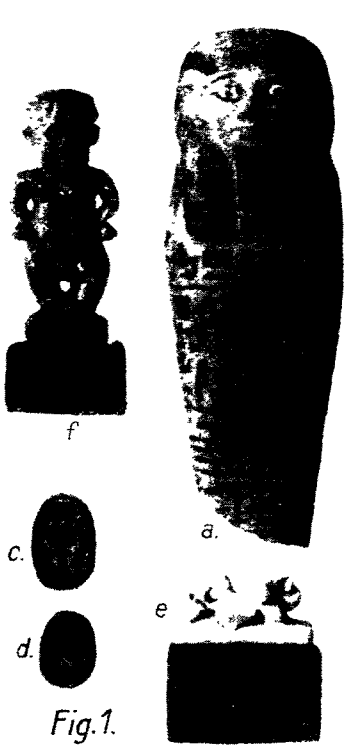


Fig. 1.

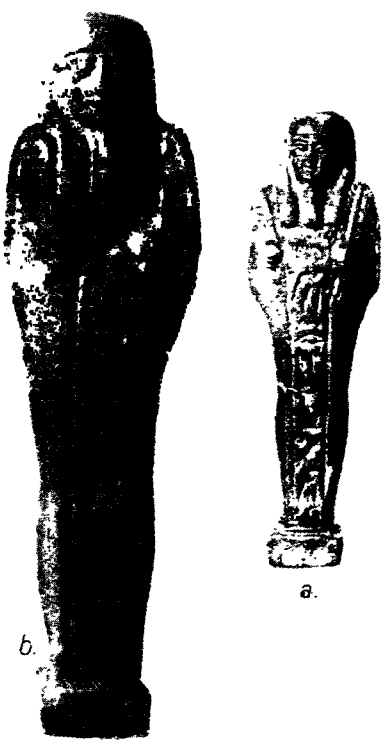


Fig. 2.

A FURTHER NOTE ON THE KA.

In Part iii of *Ancient Egypt*, 1923, I briefly discussed the possibility that some form of belief in a *ka* may once have existed in pre-Islamic Arabia, or at least the notion of a guardian spirit, which was converted by the Prophet Mohammed, for purposes of religious discipline, into an evil spirit of temptation associated (*maqroon*) with every man.[1] A belief of this kind is not found in the literature of the country, nor was it perhaps general, but it was surely known at least to the Arabs who had embraced the Christian or the Jewish faith, for though it has neither root nor stem in the Old Testament, it is found in the Talmud, having been introduced into later Judaism from Persia, where there was a large and influential body of exiled Jews. The Talmud assigns two angels to each person, that number increasing progressively for men of virtue (see Emm. Deutsch on the Talmud in his *Literary Remains*, p. 50—the post-exilian books of Esther and Tobit are sufficient witnesses of Persian influence: to take but one detail, Asmodeus was a purely Persian fiend, name and all). It is thus most probable that the Prophet Mohammed, with his wide if rather uncertain knowledge of Jewish and Christian ideas, was aware of the belief in guardian angels and adapted it to his own system, converting them into demons of temptation; this inversion of *rôles* is not unusual in such cases, for the gods of superseded religions are hard of dying and often survive as the devils of the superseder, as, for example, the Roman gods in early Christian superstitions.[2] We may conclude, then, that the "attached spirit" (*qarîn*) of Islam was derived, with one degree of removal, from Persia; it is even possible that the borrowing was direct through Arab dependents of the Sassanian kings, for Islamic teachings contain evidence of such direct influence, for example the Bridge of Doom (*el-Sirât*) to be traversed by the soul after death, and the judging angels are found in ancient Persian beliefs;[3] yet the "attached spirit" of Islam is far nearer in kind to the guardian angel of the Talmud than to the Persian protective spirit, whose name is the *fravashi*.

[1] With regard to the traces of the *ka* in modern Egypt, discussed in the same article, later accounts will be found in Miss Blackman's article in the *J. of the R. Anthropological Inst.*, LVI (1926), pp. 163 ff., and her book *The Fellahin of Upper Egypt*, pp. 69 and 288. The accounts differ in detail from those reported to Professor Seligman and myself, but that is to be expected from different people and different districts; it would indeed be surprising to find a strictly identical conception entertained everywhere in the country on so vague a matter.

[2] An interesting survival to our days of this belief about pagan gods has been reported from Italy by C. G. Leland in *Aradia* (D. Nutt, 1899). In the *imprimatur* granted in 1571 A.D. for the printing of Camoens' *Lusiads* in Spain the decision of the Censor ends with the words "it being recognized... that all the gods of the heathen are devils." Mr. R. Lowe Thompson's *History of the Devil* has much to say on this theme and Miss Murray in her book on the European Witch-cult brings forward reasons for the theory that it was a real survival of ancient religious practices.

[3] See Nathan Soderblom (now Archbishop), "Les Fravashis," extract from *La Revue de l'Histoire des Religions*, v. XXIX, pp. 10 and 70.

The *fravashi* have been most fully discussed by Archbishop Söderblom, (*op. cit.*), who has dealt in a masterly way with the various theories to which they have given rise, and who concludes that in essence they were ancestral spirits, like the Indian *pitara*; these must be kept in good condition by offerings of food and clothes, corresponding exactly to the ancient Egyptian *pr. t-ḥrw*: it was their duty and delight to come to the help of the living, whether as communities or as individuals, in all the important or perilous moments of their lives. Moreover each person has his own *fravashi*, a privilege extended later to gods (like those of the Romans, with their *genii*), plants, animals and even things—and it cares for him all his life, especially before his birth as he lies inert in the womb. The Archbishop touches (p. 58, n. 4) on the points of resemblance between the *fravashi* and the *ka*, which have been further elaborated by Professor Elliot Smith;[1] they are indeed striking and the comparison adds much to the cogency of the arguments put forward for considering the *ka* a protective spirit. In one important point, however, the Egyptian belief has taken a different development from that of the Iranian, for whereas we find in Egypt strong evidence of identification of the *ka* with the placenta,[2] that is not to be discerned in ancient Iranian beliefs. The *fravashi* does indeed come near to that notion, being concerned rather specially with the birth and care of the babe and with the continuance of the family, so that Professor Elliot Smith has surmised that there was actual identification.

Let us take the two points in order, the origin of the *ka* as an ancestral spirit and its identification with the placenta, two postulates which may appear incongruous but which may, I think, be shown to agree together quite naturally. For the first theory we have the Iranian analogy given above, which is further re-inforced by the fact that the *fravashi* and the *ka* were both connected with food-supply, even etymologically;[3] a still stronger support is found in the analogy adduced from Africa by Professor Flinders Petrie which led to the conclusion that the *ka* was by origin an ancestral spirit with the same function of personal guardianship as the *fravashi*.[4] It remains to inquire how the *ka* came to be identified with the placenta. Here we find illumination in another African analogy, very pertinent: the Bakongo count the leopard as their first ancestor and also identify the placenta with that animal, holding it to be the re-incarnation of their totem-like forefather and therefore, as we may assume from the universally protective character of ancestors among primitive peoples, the guardian of the mortal with whom it came into the world.[5] It is also termed "the brother born at the same time" (Torday, *op. cit.*, p. 237), a name which brings us very close

[1] *The Evolution of the Dragon*, Manchester 1919, pp. ix-xi and 51.

[2] See Blackman, *Journal of Egyptian Archaeology*, v. III, pp. 199 ff. and 235 ff.; Elliot Smith, *op. cit.*, pp. 46 and 51; Moret, *Les Mystères Egyptiens*, 199-201. The important physical evidence is given by Professor Seligman and Miss Murray in *Man*, v. XI (1911), No. 97, pp. 165 ff.

[3] Söderblom, *op. cit.*, p. 58, n. 4. The feminine form of the word *ka* (*ka.t*) is closely connected with birth: may we possibly surmise that the bull who, as his determinative shows, is a symbol of generation, and whose name is Ka, was originally believed to partake mysteriously of the nature of the *ka*, and perhaps the cow, too, whose name, *ḥm.t*, has also another meaning, that of *ka.t*? The ancient Iranians invoked the "soul of the ox" as a god, sometimes using the term "*fravashi* of the soul of the ox" and sometimes, though rarely, "the *fravashi* of the ox" (Söderblom, *op. cit.*, pp. 56 and 59).

[4] *Ancient Egypt*, 1914, part iv, p. 162, par. 34.

[5] E. Torday, "Dualism in Western Bantu religion and social organization," in the *J. of the R. Anthropological Inst.*, v. LVIII (1928), pp. 236 ff.

to Egypt, where the placenta is still called "the other child" and holds a firm place in the popular mind as a vital entity.[1] In other parts of Africa also the placenta is the object of special attention; for example, among the Nubians, who take a small part of it with the umbilical cord and, making a little rush-boat, float it down the Nile by night with a lit candle—Professor Elliot Smith has lately witnessed the same proceeding in Java (verbal communication). Several examples from Africa are cited by Professor Seligman in "Man," *loc. cit.*

In one feature, the protection and maintenance of the family, including the matter of birth, the *ka* and *fravashi* seem close kin to the protective spirit of the ancient Romans, the *genius*, whose very name points to that original function; he, too, came from the body of ancestors, the *di manes*, a fact not appearing from literary sources for the early age of Rome but openly declared in later times. It has been contended that this was a process due to the development of individualism under Greek influence, but it is of far greater probability that the conception, apparently new, was in fact the ancient popular one finding its way at last into literature, just as the true character of the *fravashi* is much more distinguishable in the later Mazdean literature than in the earlier, with its purer orthodoxy of high philosophic gods, naturally opposed to the more earthy popular cult.

Similarly, the Greek *daimon* means mostly, in Homer, the divine power (*numen*), showing that the Greeks even thus early had gone far in rationalisation, yet even there the word has sometimes a personal sense, equivalent practically to "a god"; Hesiod, however, treating of subjects of every-day life, accounts the *daimones* as the souls of ancestors, and not of mighty lords of battle, acting as tutelary *genii*, and thus reflects what was doubtless the popular belief and the original one. Later literature makes them individual spirits, guardians and directors of persons, of whom the best known example is that of Socrates, and thus we see once more a popular conception rising into literature after long suppression from theological, or, in this case, rationalistic reasons, and we can safely, not withstanding Homer, accept the view that the *daimon* was essentially the equivalent of the Roman *genius*.[2]

Another form of protective spirit is the "personal god" of the ancient Mesopotamians mentioned in my previous article; his chief concern seems to have been to ward off the attacks of the many demons by whom these people were constantly obsessed, in which task he was sometimes defeated: it may well be conjectured, in view of the examples before us that he, too, had his beginnings as an ancestral spirit.

[1] Miss Blackman, *The Fellahin of Upper Egypt*, p. 63.

[2] For detailed discussions see Hastings' *Enc of Religion and Ethics*, s.v. "Genius," and J. A. Hild in Daremberg and Saglio's *Dict. des Antiquites Grecques et Romaines*, v. II, part ii, pp. 1468 ff. Hild shows how intimately the idea of the *daimon* was connected with all the phases of Greek life in their various developments, a feature which proves that it was a deeply-based element of their racial beliefs, and in no wise a figment of philosophical reasoning, as one might be led to think from reading Plato and his later expounders, such as Apuleius.

It was a Greek idea, beginning with Euclid of Megara, the disciple of Socrates, that two spirits attended each man, one good and one bad, a kind of Mazdeism derived perhaps from Oriental beliefs or reached by philosophical reasoning, such as that which convinced Xenophanes of the unity of the Divinity. This duplicating development provides an interesting parallel to that referred to at the beginning of this article, among the Jews and Arabs.

Thus we come to the cult of ancestors, the oldest of which we have record. It begins with the Mousterians of the Palaeolithic age who buried their dead ceremonially and with care, providing them with food and with implements for their use in the Otherworld, and this cult is still most widely spread through the world and often of great force.[1] We may infer that at some remote period there was grafted on to it the idea that individuals were placed under the protection, not only of the ancestors in general, but of one special one and that with time the idea underwent various developments of which some have been discussed above: in Africa it received an important accretion, originating probably in Egypt, where the individual ancestral spirit was identified with the placenta, coming into the world at the same moment as the mortal who was to be under his protection; it is thus quite intelligible that the *ka*, belonging to the ancestors, the Egyptian *di manes*, should on the person's death be found awaiting him in the Otherworld, where, as we see in the Pyramid Texts, the man just dead is said to "join his *ka*."

[1] It still has its traces with us, in All Saints' Day and All Souls'. In China and adjacent countries it is paramount, never having been smothered by invaders, as it was in Persia and India by the Aryans and their religious reformers,—though surviving strongly as a popular cult. Soderblom gives a moving picture of the cult in its domestic and intimate phase, pressed down though it was by the alien theology of conquerors, but when, as in China, it has crystallized into the official system of religion, it penetrates most thoroughly into all the business of life, domestic or national, and is often the largest element contributing to mould its forms for this—see the enlightening study by Bouinais et Paulus, *Le Culte des Morts* (Musée Guimet, Bibl. de Vulgarisation) treating of Annam, a cultural offshoot of China.

G. D. Hornblower.

BETWIXT EGYPT AND NUBIA.

Five thousand years ago, the boundary between Egypt and the Sudan was fixed where now lies the little village of Faras, twenty miles north of Wadi Halfa and though, during the Roman occupation of Egypt, the boundary was withdrawn some two hundred miles northwards to Assuan, nowadays Faras again marks the frontier between the two countries.

Within an area of less than two miles square are to be found flint and quartz weapons and implements of the stone ages of fifteen thousand years ago; Ancient Egyptian temples: an Ethiopian walled town; a Roman fort; early Christian Churches and anchorites' caves: an Arab stronghold; a Turkish citadel; a Dervish outpost; and spent cartridges from British rifles. It is hardly possible that a day could be more profitably spent than in exploring the varied interests of Faras.

Most of this area was worked by Professor Griffith's Oxford expedition in the seasons 1908–1912 and, of the valuable finds, the greater part was retained for the museums at Wadi Halfa and Khartum, though some were sent to London and Oxford. Since then the locality has been very little visited, as it is not a regular stopping place for the river steamers. The best way to make the excursion, is to hire a private steamer from Wadi Halfa, for there is hardly a single mile between Halfa and the frontier that is not full of historical interest and natural attraction.

Arrived at Faras, it will be best to tie up at the west bank, exploring this side, where there is most to be seen, in the morning, and in the cool of the evening crossing the river and doing the east bank. You start the day under the happiest auspices. The sun is shining with the genial warmth of an English summer's day yet from the desert blows a clear cool breeze with the exhilaration of a spring morning. From the deck of the steamer you see the refreshing green of the narrow strip of herbage with which the bank is sown, topped by tamarisks and majestic palms, while the water-wheels, worked by patient oxen, are creaking at their homely task as they have done down the ages. You mount your donkeys and ride off, preceded by your guide in his long black galabieh, walking barefooted, and carrying incongruously enough in the blazing sunshine a candlestick, for which foresight you bless him when you come to the rock dwellings that were the living tombs of anchorites who foreswore the light of day. Riding northwards along the river bank for about a mile you reach a hill, on the slope and summit of which are the ruins of a Coptic monastery and Church. The ruins compare unfavourably with what is seen later on for they are largely buried in sand, but nevertheless give a good idea of the general scheme of Coptic building. As a rule, the materials used were burnt brick, sun-dried mud brick, and undressed stone. Hewn stone was only used when it was taken from Egyptian temples; against the looting

of these there seems to have been very little scruple. It is strange to see Egyptian hieroglyphics ornamenting a Christian Church. The walls are built of mud-mortared stones up to eight or twelve feet, above which the plan is carried out to a finished height of thirty-five or forty feet in mud brick, in which you notice a generous proportion of chopped straw. There are practically no traces of timber, the roofs being formed by vaulting or domes in mud, while the arches of cloisters, aisles, and windows are either of burnt or mud brick. Outside, the walls are of the unrelieved dun colour of mud and stone, but inside all is whitewashed, and on this wash are still to be seen traces of painting, sometimes formal designs and sometimes figures of saints. Everywhere, within and without, the ground is strewn with pottery, for this was the chief and best handicraft of the period, and there have been found countless water-jars, lamps, drinking-vessels, and plates, many of them decorated with pictures of birds and animals, the ornamentation being usually black on a red ground, though a plain white design was not uncommon.

The northern Sudan was Christianised at a very early date by missionaries sent from Alexandria, the centre of Christianity in Egypt, and by the sixth century there were two firmly established Christian kingdoms, with capitals at Dongola, and at Soba near the modern Khartum, which flourished until the fifteenth century when they succumbed, partly to inroads from the desert Arabs and partly to internal dissension. The Christian remains at Faras are mostly Coptic, dating from the seventh to the tenth centuries. By the third century there were thousands of monks who had retired to the solitude of the desert, partly for a real desire of lonely meditation and partly driven by the Roman edicts against Christianity, but it was after the Moslem conquest of Egypt in 642 that there was the greatest influx, into friendly Nubia, of those who fled south rather than abjure the tenets of their faith.

Turning your back on these ruins, and striking inland from the river for a mile or so, you reach a hill into which are tunnelled a series of rock dwellings that have been the homes of the living and of the dead (Fig. 1). Each dwelling is cut as a series of three rooms, about twelve feet square by seven feet high. They face east, so that the rising sun shines straight through the doorway down the whole length of the three chambers, to the innermost wall. They were made, with customary patience, by the Ancient Egyptians, as tombs for local princes and notables, though never completed. Later on they were occupied by hermits and are generally referred to as "Anchorites' grottoes." By the light of your candle you will see that the walls of the first chamber, which was the chapel of the recluse, have been plastered and whitewashed in the Christian manner, and are covered with pictures of saints, with formal designs like aces of spades in a diamond pattern, with inscriptions in Greek and Coptic, and, at a date obviously long after the monks were dead and gone, with scratched drawings of boats, animals, and birds. The saints are mostly shown mounted on long-tailed steeds for here, as in general throughout Nubia, the representations are nearly all of the Church militant, St. George and the dragon being a particularly favourite subject. The inscriptions are of creeds and prayers so arranged as to look like framed texts or the pages of an illuminated manuscript, and are mostly the work of one Theophilus, who lived here early in the eighth century, and whose legacy includes his own private prayers and, strangely enough, written in Greek characters the famous Latin

palindrome—"Sator Arepo tenet opera rotas"—which he seems to have written as a charm at the head of his bed. This bed is a stone coffin in which the monk slept when he was alive and in which he was buried when he died. Through the floor of the middle room has been sunk a deep shaft which the guide will tell you is a well, but which was no doubt a grave, though whether of Ancient Egyptian or Christian is not clear, as this form of tomb is common alike to both periods.

Two hundred yards or so to the south-east are fallen stones, covered with pictures and hieroglyphics, that mark the site of an Egyptian temple, and though so little of the temple remains, you can easily imagine, standing on the spot, the pomp and pageantry of the Egyptian worship, and contrast it with the picture of the chastened recluse telling his beads or saying his prayers in the grotto you have just left.

Continuing a short distance southwards, you come to a pair of twin churches standig side by side, which are built to what may be called the standard Coptic pattern of the eighth century. Though small, they are beautifully proportioned and are most interesting. You can reconstruct them in the mind's eye and people them again with ascetic and devout monks. Except that the greater parts of the roofs have fallen in, the churches, though of mud, still remain substantially as they were built, over a thousand years ago. The design is a nave about eighty feet long, thirty feet high, and fifteen feet wide, connected with two side aisles, each eight feet wide, by arches that are a compromise between the pointed and rounded styles. The walls are some four feet thick, and the roof is in the form of three mud vaultings over the nave and two side aisles. The east end is in the form of an apse with three niches for figures of saints, and is flanked on either side by stone columns that were probably taken from Egyptian temples. At the west end are mud steps leading up to what must have been a tower or belfry, and above the west door it looks as though there were a large window in the form of a Coptic cross. Inside, the whole of the church was white-washed and there are still to be seen, on the walls, fragments of the paintings of religious subjects that formed the decoration. These churches are practically always built on platforms of rock in which the neighbourhood abounds, and a common feature is a shaft which, as far as can now be seen, was some fifteen or twenty feet deep and was generally cut near the east end. At the foot of the shaft are two or three tiers of narrow chambers just large enough to take a coffin, and resembling catacombs; it would seem that abbots and the more important people were buried within the churches rather than in the cemeteries.

Some may find it difficult to believe that mud buildings could withstand the ravages of time, yet there are, in the Nile valley, mud walls of the iind dynasty still standing to a height of thirty feet, though nearly five thousand years old. The reason is that in this part of the world it may not rain for years at a time, and then only a slight drizzle. A great danger to the preservation of these ancient monuments is that of injury by local inhabitants, for the old straw-bound mud bricks make most excellent manure. Though the churches have suffered from depredations on this account, such spoliation is now strongly discouraged.

Just south of the two churches is the boundary between Egypt and the Sudan, marked by a sign-post surmounted by a large iron broad arrow out

of which is cut in the northern half the letter E and in the southern half the letter S, there being a similar boundary mark on the other side of the river.

Immediately behind the boundary mark is a large cemetery which merits attention, for in it are graves some of which are nearly three thousand years old. The earliest graves are those of the Ethiopians who ruled the whole of Egypt and the Sudan twenty-seven centuries ago. Even in those days Faras

Fig. 1. The Anchorite's Grotto.
Fig. 2. The Citadel of Faras.

was a large and important settlement though, after their conquest by the Assyrians, the Ethiopians fled south and carved out for themselves another flourishing kingdom round about Khartum. The Christians, fifteen hundred years later, used the same cemetery. The Ethiopian and Christian graves are identical in form, consisting of mud brick vaults about eight feet square. On being opened up, there would be the difference of funerary equipment of the two periods. In the midst of the cemetery are the tumbledown walls of what must have been a Christian chapel where the burial services were held.

Adjacent to these old graves is the Mohammedan cemetery of the present-day village of Faras, to which as often as not—particularly on a Friday—you will see a funeral procession winding its doleful way. The modern graves are merely shallow holes in the ground with large stones, one at the head and one at the foot; if the interment has been recent, a crude white flag in the form of a fluttering rag on a stick marks the spot. On the grave you will notice palm leaves or corn stalks and a gourd of water, symbolic of provision in the other world for the departed. Perhaps the grave will be covered with pebbles, though this is not common to all tribes; it means that prayers have been said over the grave,—the confession of faith, "There is no God but God," a pebble being dropped every time the prayer is repeated.

On the southern fringe of the cemetery is the site of what must have been a comparatively large Egyptian temple, for though the remains are not imposing, there are still to be seen the foundations of fifty huge stone columns, each about five feet in diameter, and arranged in five equidistant parallel rows. In this neighbourhood, nearly everything has painted on it an English number, clear evidence of the methodical way in which the archaeologists of twenty years ago conducted their operations.

Continuing in a southerly direction and bearing towards the river, you encounter a strange group of mud buildings, circular in form and with domed roofs, obviously too small for houses. These were potters' kilns—generally spoken of as the potteries—and, to judge from the number of potsherds strewn for miles around, the output of the kilns was enormous. In the kilns were found many tools and appliances, even the seals and stamps of the potters together with examples of their handicraft in all the various stages of manufacture—from the lump of clay to the baked and finished article—in pottery and also in fine quality of glaze.

Adjoining the potteries is the greatest glory of Faras—the citadel, a walled rectangular enclosure in which is littered *débris* of all ages (Fig. 2). The wall, which can still be traced for the greater part of its mile-long perimeter, standing in places to a height of eight feet, was very solidly built of dressed stone in the Ethiopian period twenty-seven centuries ago, though within the bounds of the enclosure are remains of every age from the xiith dynasty to the present day. Inside the walls, the ground slopes up in the form of a hill about a hundred feet high which is of commanding position on the river bank and would appear to have been fortified from the earliest times. The Ancient Egyptians, in fixing their southern boundary at Faras, planted a fortified outpost here which was no doubt rebuilt and strengthened a thousand years later in the xviiith dynasty, when a chain of forts—within signalling distance of one another—was built all along this part of the Nile valley. The site was in turn defended by the Ethiopians who built the massive surrounding stone wall; by the Romans who greatly strengthened it as a bulwark against the threatening Nubians; by the Arabs during their conquest of the Sudan in the seventh century; by the Turks in the middle ages, when Egypt became a Turkish Pashalik and the Sultan had ambitious schemes of an African Empire; and lastly by the Dervishes in 1889 when under their brave and able chieftain—Wad en Negumi—they attempted to invade Egypt, but were annihilated thirty miles farther north at the battle of Toski. In addition to the traces of military occupation there are also, within the enclosure, remains of two Egyptian

temples, and of several Christian churches, one of which was built very unusually of stone; the enclosure, like the rest of Faras, was occupied by monastic communities from the viith to the xvth century. Of the temples there are very considerable remains in the form of red granite columns, presumably from the quarries at Assuan as there is no such granite hereabouts, and fragments of hewn stone, of all shapes and sizes, with very clearly cut hieroglyphics. The Christian churches were built wherever there was room in the

Fig. 3. The Stone Church.
Fig. 4. The Hat-hor Rock.

citadel and were of the stereotyped pattern in rough stone and mud. The stone church seems to be the only one of its kind in the neighbourhood (Fig. 3); it is planned in every respect like other Coptic churches, and decorated with paintings of saints; yet the fact that the stone is of the same kind, and is carefully hewn and joined exactly in the same way as that forming the enclosing wall, would seem to argue that this church is of the same period as the wall. Perhaps the building was originally an Ethiopian temple, on the lower courses of which the Christians superimposed their customary church of

mud, for it is only the stonework that now remains, displaying a craftsmanship far superior to any building usually associated with the later periods. The enclosure with its towering citadel must have been a very strong military outpost and, as far as can be seen now, there was only one gateway, a fine rounded archway, through which there was just room for a chariot to pass. It was covered on the inner side of the wall by a mound or blockhouse, which would have made any attempt at a forced entrance a very hazardous proceeding. The citadel is now inhabited by villagers who have converted odd corners into rather ramshackle dwellings, rather than build, and it is incongruous to see here and there, embedded in the mud walls, stones inscribed with Egyptian hieroglyphics and Christian symbols.

A quarter of a mile southwest of the citadel is an isolated rock known as the Hat-hor Rock (Fig. 4) in which was cut a memorial niche to the local governor of Ramesside times, whose epitaph is still to be read. This niche was, later, the home of a Christian recluse like the Anchorite's Grotto farther north. On the top of the rock was a Christian church, which in such a position must have been very imposing; nothing of it now remains, though it can clearly be traced where the various columns stood. When Faras was excavated twenty years ago, there was still to be seen, near the Hat-hor Rock, the ruin of a large Ethiopian mud palace but since then this has disappeared, probably as a result of the activities of the sebakhin before the present restrictions were enforced.

The whole of Faras has by no means been thoroughly excavated; possibly archaeologists will turn their attention to this neighbourhood again, in the near future; though the visitor might by good fortune pick up an Egyptian scarab or a few beads, such finds are rightly the property of the government, and any souvenir-hunting is looked upon with a disparaging eye by the village policeman who closely attends you in your peregrinations!

On the way back to the steamer, you will be as deeply interested in the life of present-day Faras as you were in the remains of bygone ages, for the whole two miles that you have traversed is interspersed with mud and straw houses. On your right is the Nile, sparkling as blue in the sun as a summer sea and, along its banks, narrow cultivation of beans and lentils topped by a row of sentinel palms, with the primitive water-wheels and water-buckets pouring out their meagre streams of life-giving water, while on your left are all the varied activities of native domestic life. The people hereabouts are inclined to superstition, for above the doorways of the houses you will see, embedded in the mud walls, china plaques or saucers that bring good luck and keep away evil spirits, while the women folk often wear gold horse-shoes on their breasts. You meet only women and children, for the country is very poor and the men have all gone to Egypt or to other parts of the Sudan where they earn good wages as hotel or house servants, which they spend almost entirely on jewellery and other articles of feminine adornment. The women are more Egyptian than Sudanese in dress and appearance, and wear their long black flowing robes, and loose red trousers gathered in at the ankle; they go about their work among the crops on the river bank. They carry all the wealth of the household on their persons, being laden with gold ear-rings, nose-rings, and anklets, while in the hundred thin plaits of their hair are woven glass beads of various colours, and on their wrists are bracelets of gold, silver

or coloured glass. This display of wealth is very surprising and its explanation is rather curious. Mrs. Mohammed is not always, as is often supposed, the downtrodden and helpless chattel of her lord and master, but can be as exacting as any imperious western beauty. She sees that her husband spends his money, if on apparel and adornment for herself so much the better, but spend it he must for if he saved it he might arrive at a state of mind that would persuade him to take to himself a second wife, and as she can deliver as

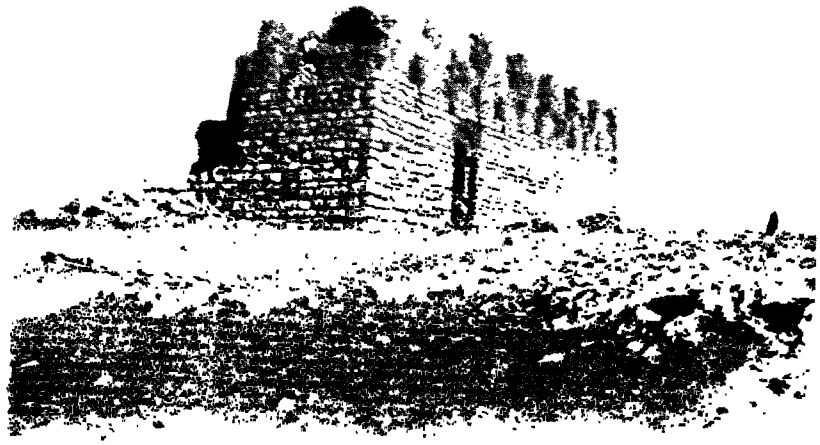


Fig. 5. A Church in two Countries.
Fig. 6. A public Fountain.

effective a curtain lecture as anyone else, her husband—like many another—sacrifices quite a lot for the sake of peace and quietness! You will be well advised not to try and take a photograph of these women folk, for the comely ones go about in groups under the watchful eye of a beldame who will annihilate you with her shrewish tongue, fearing, so she says, that the photograph will fall into the hands of the husbands who might conceivably misconstrue its purport, though more probably she is afraid of the evil eye of the magic box of the camera!

We cross the river to explore the eastern bank. The villages straggle along both banks; the western village is named Faras and the eastern is Adendan. Donkeys are not necessary on the east bank where the sand is firm and walking is both easy and, in the cool of the late afternoon, delightful. There are two Christian churches at Adendan, one, about a quarter of a mile from the river, exactly resembling the twin churches already seen at Faras; the other, some half a mile farther inland, is built entirely of mud; both are in excellent state of preservation. The church near the river is situated in two countries (Fig. 5), for over its western doorway is the Egyptian-Sudan boundary mark, the counterpart of the broad arrow on the western bank, while if you stand at the east end of the church and look down the length of the nave you see through the west doorway, right across the river, the boundary mark on the other side.

Walking northwards from the churches into Egypt, past two old Mohammedan cemeteries and a straggling line of deserted mud houses, you reach the prosperous-looking village of Adendan. These old cemeteries and deserted houses are not uncommon in this part of the country, the reason being that the soil is poor and soon exhausted, after which the villagers move on and build themselves new houses, a very simple affair when the only materials required are earth and water for mixing into mud bricks and plaster. There is much more cultivation at Adendan than on the other side of the river and the crops of beans in flower are most refreshing. At the entrance to the village is what appears at first sight to be a sheikh's tomb, but proves to be a public drinking fountain, a feature of village life not often seen across the border in the Sudan (Fig. 6). The fountain consists of four or five large pots of porous earthenware, standing in the cool shade of a deep whitewashed mud arch, surrounded by a paved courtyard. Situated in a grove of feathery tamarisks, it is a happy institution, affording as it does to the peasants working in the fields a little open-air club where they can foregather in the heat of the day to refresh themselves with a draught of cool water and exchange local gossip.

Returning to the steamer after a full and happy day, the crown is set upon your content by the enjoyment of one of the most beautiful sights this earth affords—an African sunset—in which river and desert and hill, flushed a delicate rose that is flecked with purple shadow, all too fleetingly change through every shade of autumn leaves to the jewelled dusk of night.

A day at Faras by no means exhausts the possibilities of the neighbourhood, for the reach of river between the First and Second cataracts is in many ways the most attractive, and certainly the richest in varied interest, of all the Nile Valley. There are flints and fossils, and near Wadi Halfa rock-pictures that are very ancient. There are scores of temples, churches, and fortresses, for this region was, at one time, the arena in which mastery meant the Empire of the World. You may land almost anywhere with the hope of making discoveries for, though most of the known sites have been more or less completely explored, there are without doubt many other finds yet to be made which will add more than one chapter to the book of our knowledge of the ancient east.

Nature however is very whimsical and, until you acquire wisdom from experience, leads you on many a wild-goose chase. You see a hill that looks like a pyramid—as so many of them do—in fact it is supposed that these little

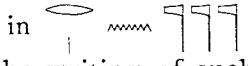
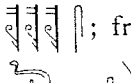
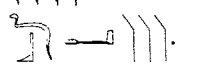
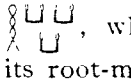
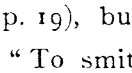
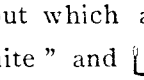
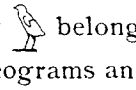
isolated hills inspired the pyramid tomb, and furthermore you are sure you can see through your glasses a doorway or a niche in the eastern face, and off you go full of enthusiasm. What looked in the desert air like a walk of a few hundred yards resolves itself into a tramp of two or three miles but you are buoyed up by the sight of broken pottery, and fragments of curiously coloured stones, that look like bits of jade, amber, or tortoiseshell, only to find in ninety-nine cases out of a hundred that it is only a hill after all—though such is the fascination of the country that you are never discouraged and are always confident that the hundredth chance will be yours!

There are halcyon days to be spent cruising on the Nile when life is one long joyous thrill. You encounter all kinds of craft from the tourist steamer to the little felucca, white and graceful as a river bird. There are weird vessels, half steam and half sail, that look like huge slave dhows and are engaged in the local carrying trade, and there are majestic sailing boats that might well be Roman galleys—with prows like a swan's breast—and if you speak Arabic you can talk with the dignified local sheikhs or the simple and courteous peasants and learn a little of their homely joys and destiny obscure.

J. H. Dunbar.

REVIEWS.

The Plural and Dual in Old Egyptian. By RAYMOND O. FAULKNER. Bruxelles (Fondation Reine Elisabeth), 1929, pp. 70.

Mr. Faulkner has made a detailed study of the confused and confusing orthography used to express the ideas of plurality and duality in the early stages of the Egyptian language. As might be expected when a study, such as this, is undertaken by an expert, many interesting points emerge. Mr. Faulkner divides his subject into four sections, nouns, adjectives, demonstratives, and verb-forms. As regards nouns, he remarks on the fact that the singular was, in primitive times and in later archaistic texts, often used also for the plural; and suggests that the common writings  and  are not abbreviations but are true survivals of what he calls "disguised plurals." He gives also an interesting explanation as to the use of the singular in Egyptian where a plural would be expected in English. Thus in  "mouth(s) of the gods" he suggests that "to the Egyptian the writing of such nouns in the plural might imply that the individuals concerned had more than one mouth." He goes on to note that the plural with genitival qualification is often used with great, almost dramatic, effect; as in  "He [the King] has seized the hearts of the gods," where the plural indicates that the King seizes as many hearts as there are gods. Mr. Faulkner is of opinion that simple ideograms are not abbreviations but are the original form of writing the word, the repetition of the ideogram representing the plural. Occasionally an alphabetic sign is added as a phonetic complement, as in  ; from this it is but a short step to the complete spelling out, as in  . I think however that he has misunderstood the meaning of  , which he calls "an exceptional plural" (p. 19), but which appears as its root-meaning to consist of two words  "To smite" and  "Spirit, or double"; the compound word means a magical charm, but the writing of the plural would be influenced by the fact that the second member is a complete word in itself. Another interesting point, which Mr. Faulkner notes in the writing of plurals of nouns, is that the phonetic ending  belongs properly to purely phonetic writings, and that its occurrence with ideograms and repeated phonograms is secondary. The section on adjectives is important as explaining the difference in the writing of nouns and adjectives: "Since an adjective stands not for an object but for some quality inherent in that object, it lies in

the nature of things that it cannot be represented in hieroglyphic by a picture or ideogram, but must be rendered with signs used purely phonetically; in other words, an adjective cannot be drawn but must be written." Consequently the plural and dual of an adjective must also be expressed phonetically. The feminine plural is never written, either in the true adjective or in the nisbe-adjective; the writing for the plural is the same as for the singular. This is in contrast with the writing of the feminine dual adjective, where the appropriate termination is fully written. Egyptian participles follow the same rules as the true adjectives, so also do the genitival and relative adjectives. Demonstratives are in a class apart as regards the formation of the plural, which is done by means of prefixes; in the masculine  is prefixed to the stem, *e.g.*  sing.,  plur.; in the feminine  is the prefix, *e.g.*  sing.,  plur. The duals in both genders can be only be deduced from later examples. Mr. Faulkner has, however, tabulated the forms of the demonstratives, showing the earlier and later methods of expressing number. The verb-forms, which show the use of number, are the participles, *śḏm-tí-tí*, imperative, and the old perfective (pseudo-participle). The book is published in lithograph, and Mr. Faulkner is to be congratulated on his clear handwriting of both English and hieroglyphic. The whole volume shows a vast amount of research and careful study, and Mr. Faulkner bids fair to become one of our chief philological scholars. The book is a fine piece of work.

M. A. Murray.

The Sumerian Tablets in the Imperial University of Kyoto. By Yomokuro Nakahara (Tokyo, The Tôyô-Bunko, 1928).

Mr. Nakahara has the distinction of being the first known Japanese Assyriologist, and this is his maiden work. In a preface to it, Professor Hamada relates how the study of Sumerian was first introduced to Japan in 1910 by Professor Sayce, and how the late Dr. C. J. Ball gave to the Imperial University of Kyoto the small collection of tablets now published in this book. Nearly all are specimens of the account tablets from the great find at Drehem, now dispersed among the museums of the world. They thus belong to the most numerous, though by no means the best understood, class of Sumerian documents, and Mr. Nakahara is to be congratulated on the general success of his translations, though he would no doubt be the first to admit that he has still something to learn about these difficult texts. A Chinese or Japanese student has certainly a preliminary advantage in learning Sumerian, owing to his familiarity with a script which has some principles in common with that invented by the Sumerians. Not very much is gained, however, by the attempt to fit the Sumerian writing into a classification of signs devised by Chinese scholars, which the author here makes in his introduction. The copies of the texts are generally good and clear, and the photographic plates excellent.

C. J. G.

P'i-tzu-wo, Prehistoric sites by the River Pi-liu-ho, South Manchuria. Archaeologia Orientalis I. (The Far-Eastern Archaeological Society, Tokyo and Kyoto, 1929.) 4to, 75 pp. Japanese, 39 pp. English, 41 + 68 plates.

Professor Hamada is flying high with his school, and has produced a magnificent volume as the beginning of a series of Oriental Archaeology. Long may such a series last, and be a stimulus to Europe to issue such full and finely illustrated accounts of excavation. In the foreword the work of the staffs of Japanese and Chinese museums and Universities is acknowledged, but it has fallen to Prof. Hamada to co-ordinate the whole of it, write it up in Japanese, and make the English summary here issued. We cannot thank this scholar enough for giving us the English version of his works, which makes them accessible to Europe. In the Japanese text there are 41 plates and blocks which should be consulted. These supply sections and a stratigraphical table of finds, all with English equivalents: implements and pottery forms, patterns on pottery, metal vases, coins and knife money: The 68 plates are fine collotypes of views and objects. Some plates of painted pottery are full size, half of exterior, half of section, and the section coloured to show the texture of the ware.

The site of the excavation was on the Pi-liu-ho river in the Liao-tung peninsula, half way between Korea and Pekin. The settlements were on a promontory and an adjoining island. The period is in late neolithic and eneolithic culture, at about 300 to 200 B.C., according to the coins associated on the mainland, and purely neolithic on the island. The knives and other implements were made of slate, schist, or gneiss. Bronze arrow heads were all triangular Asiatic types, with rather curved outline; most were solid triangular, a quarter of them had thin blades. There was part of a cross-bow. Iron was used for axes and agricultural tools. Two skeletons were found in graves, and very full measurements of these are given by Prof. Kiyono and friends, in German text. Dr. Saito reports on a piece of cast-iron blade of a hoe; it contained over 4% carbon, an eutectic alloy which has the lowest melting point.

Another series of volumes is started as "The Oriental Library," Toyo Bunko. Beside the work on Sumerian tablets reviewed by Mr. Gadd above, there is another part, No. 2, 145 pp. on the Arab trade with China, based on an account of one of the superintendants of shipping P'u Shou-kêng: another paper is on Sogdiana, and the Chinese references to Russian Turkestan. In many ways, therefore, historical research is being vigorously developed where it is most required, to clear up the early history of Asiatic civilisations, which had so much influence on Europe.

JOURNALS.

Annales du Service. XXVIII.

Sélim Hassan.—*Inscription sur le socle de statuette.* This was for a prophet of Tehuti, named Tehut-ar-dus born of Peduneit born of Nos. It is probably Persian or later. The peculiarity is the elision of signs where they would be repeated, such as prophet of Tehuti (Tehuti) ar-dus.

Daressy, G.—*La trouvaille de Sen-nezem.* This fine untouched tomb at Deir el Medineh was cleared out by Maspero in 1886, without any plan or record. M. Toda who was present drew up some account of it. For lack of space, Maspero only kept the finest objects, and sold off the rest to the Metropolitan Museum of New York. M. Daressy made a list, but has since obtained from Mr. Winlock a more complete register, which is here published.

Daressy, G.—*Un poids de Tell Oumm Harb.* A granite weight, of the domed-top form, was measured by M. Daressy and estimated at 218 kg or 336,000 grains. This does not fit any likely multiples of units; 2400 *deben* is never found elsewhere, 1600 *beqa* is more likely, as 40 *beqa* is often found. But as the gauging of such a figure is but approximate, the dimensions being only to the nearest centimetre, the weight may easily be 2% different and the specific gravity may be 1% from what is assumed. Thus the weight is between 326,000 and 346,000 grains, and this would well include 2500 *deben* of 1380, which is within frequent variations.

Engelbach, R.—*The so-called Hyksos monuments.* This important article begins with quoting Dr. Capart's summary of the various opinions about the black granite sphinxes and heads. The conclusion of M. Daressy (see *Anc. Eg.* 1920, 105), that all the Tanis monuments were stolen from various temples by Ramessu II for his new capital, is fully adopted by Mr. Engelbach. The reasons stated by Dr. Capart for a date before the ivth dynasty are quoted. They are, that the sphinx is an immature form of the later sphinx type, and the mane is in large locks of hair. Then the heads of captives lately found at Saqqareh have been quoted as parallels, but Mr. Engelbach rightly says that they are different. The details of the Tanis figures have been stated; (a) the little locks of hair on the fish offerers and the Ludovisi bust, like those on the red granite kneeling figure of iind dynasty, but such are also found in Middle Kingdom statues. (b) The beard of the fish offerers is like that of Hierakonpolis ivory figures but differs in detail of treatment. (c) The locks of hair of the fish offerers and the Fayum bust are like those on the archaic limestone statue of Hierakonpolis. Other details are even less decisive.

Next, the material, very dark grey, or black granite is usual in the xiith dynasty, but not found in royal statues of the Old Kingdom. The forms of the uraeus on the head, of the ivth to xiith dynasties, are illustrated. The form of the gold uraeus of Senusert II is omitted, but this is important, for it is the earliest dated example of the simple form with two bends, as found on the Tanis statues. The other examples of this type of uraeus are those of Senusert III.

Another criterion is the form of the eye; in the Old Kingdom, the outer corner has the lids meeting in a point; in later work, the upper lid is stated to pass over the lower. Such is the case in the Tanis statues. The form of the head-cloth on the Bubastis colossi is also stated to be unknown in the Old Kingdom.

The proposal of M. Golenischeff is then considered, that the figures are all of Amenemhat III. Finally, Mr. Engelbach states that he concludes that all of these figures are either of Senusert III or Amenemhat III.

Now we may note that it is very remarkable that, in all these discussions, the portraiture as a whole is disregarded,—is even defied. The recent collection of photographs of the xiith dynasty by Dr. Evers in *Staat aus dem Stein* is reviewed in our last number. From that book it is more practicable than before, to take into account the physiognomy; the conclusion is that the Bubastis colossi are of Senusert I, and the best-known of the Tanis sphinxes. One or two other sphinxes of very different features appear to be of Amenemhat II, and the fish offerers have a characteristic of Senusert III. Certainly not one of these faces could be taken for the same person as the Hawara statue of Amenemhat III. The "lumber-room" must be sorted out, and the contents put in their appropriate places.

The resemblance of the Tanis sphinx to the Galla race (*Ancient Egypt* 1920, 105) falls into its place. The Uah-ka family of the xth dynasty at Qau had tombs of the type of Nubian temples, unlike any tombs previously known. They were ancestors of the Senuserts, and it must have been an heiress of that race who married Amenemhat I of the fellah type; their son Senusert I carried on the Galla type, and founded the xiith dynasty. Thus Manetho's statement that Amenemhat was of the xith dynasty is now justified by the portraiture.

Lefebvre, G.—*Petits monuments du Musée du Caire.* A stele from Dakhleh of the time of Vespasian, 78 A.D. The figures are of Shu, Tehuti and Nehemt-ouyt, and a Greek inscription states that the stone is "the place occupied by Apollonios son of Petenephotes and his sons." This stele was found at a small temple, twenty kilometres south-west of el Qasr. The *topos*, place, of a family here must be similar to the "place" of Aristius Saturninus at Koptos, inscribed on a small tank of stone. Other little tanks were in the Koptos temple, one with the outline of a foot incised in it (*Koptos* xxviii). These all seem to have been for the religious ablution of the worshipper. The "place" was like a private pew in a church.

A Byzantine inscription at Aswan relates to the building of the rampart which defended Syene. An official of Esneh was sent up for this, which suggests that the "wall" here named was the great boundary wall of the frontier, and that all the nomes above Thebes had to share in this defence.

Dedication on the base for a statuette, to Antaios, by the son of Antaios the prophet Apollophanes.

KEIMER, L.—*La représentation exacte d'une feuille de Nymphaea Lotus.* The leaf of the usual blue lotus has a smooth edge, that of the white lotus a crenated edge. This latter form is shown in a bunch of lotus hanging over the arm of a girl carrying offerings, in a scene of about the xxxth dynasty, no. 29211 in Cairo Museum. Another instance of this form of leaf—put with the wrong flower—is figured in N. DE G. DAVIES, *Two Ramesside tombs at Thebes*, pl xxx.

BORCHARDT, L.—*Ein Bildhauermodell aus dem frühen alten Reich.* This calls attention to a sculptor's trial piece at Cairo. On one side is a king in *sed-heb* dress, with a flail and very early form of crook, also three *ba* birds finely carved: on the other side a king's head with the red crown, and features which are compared with those of Sa-nekht and Zeser. The ribbed form of the crown is not seen elsewhere, and may have some reference to the mode of forming it; yet as the much older form is the cap and feather (*Naqada*, li, 75) which had been entirely forgotten when this trial piece was cut, the ribbing is probably only a decorative freak.

JÉQUIER, G.—*Fouilles exécutées dans ... la nécropole Memphite*, 1927–8. Tombs of the vith dynasty have been cleared to make a sterile zone for dumping from the Pepy temple. In the middle of the vith dynasty there seems to have been a transformation of the tomb system; instead of having the figures of offerings in a chamber accessible to the living, the offerings are placed in the sepulchral chamber. (An example of this type is in *Dendereh* VA, Adu 1.) Many of the persons buried in this cemetery are named in the court service of the pyramid of Pepy II.

The funerary temple of Pepy II has been disclosed, and a plan is here published. It is of the same essential parts and arrangements as the temple of Sahura, but with many more store rooms around it.

HAKIM ABOU SEIF. *Deux sarcophages à Touna el-Gebel.*

SAMI GABRA. *Un sarcophage de Touna.* These accounts of the removal and copying of a sarcophagus describe one of the xxvith dynasty, for Aohmes the high priest of Tehuti, son of Psemthek and Taza. It is of anthropoid form, of fine white limestone, with 21 figures of the assessors on each side. It has the scene of the Hapi bull bearing away the mummy. This scene is discussed, and seven other examples drawn for comparison.

FIRTH, C. M.—*Excavations ... at Saqqara*, 1927–8. The great tomb on the south side of the Zeser enclosure was further examined. The whole of the filling of the great shaft was removed, to reach the granite chamber at the bottom. This chamber, when reached, was found to be like that in the Step pyramid, having a round entrance closed by a granite plug, made in two vertical halves. The chamber inside was only 63 × 64 inches, and 52 high, in fact a sarcophagus rather than chamber. What kind of burial could be put in such a space? Was it contracted burial? Zeser belonged to African immigrants, did they bury contracted? Yet the gilded canopy-poles, carrying-bier, and all the offering jars show that a burial did take place here. Mr. Firth suggests that the *teknu* burial was placed here (*Anc. Eg.* 1923, p. 47). The tile lining of

the chambers in this tomb is complete, while those in the pyramid are unfinished. The upper chamber over the granite chamber is 120 × 64 × 64 high so that it would fitly hold a coffin of the usual size. Yet there is no sarcophagus. But with such a chamber, what was the use of the granite creep-hole below?

Further examination of the Step pyramid led to a search for any internal passage connected with a filled-up east entrance. A passage, not fully cleared by Perring, led to another blue-tiled room with three steles of Zeser, similar to those in the great south tomb. Two of the steles had been used for drawing lessons, as they bore lines squaring them up for purposes of copying. This was in Saite times, after they had been injured. A different kind of blue tile, found in the rubbish, suggests that there is yet an older chamber somewhere below.

LAUER, J. P.—*Étude sur quelques Monuments de la IIIe dynastie.* This account deals with the architecture of the chapels along the south side of the Zeser enclosure. It is a region which contains more architectural detail than other sides; all the fallen blocks have been exhaustively tried for junction with others, and thus their original scheme has been traced. There are excellent drawings of restorations, and the limits of uncertainty in the height are stated, which gives confidence in the treatment. A small temple, 75 × 29 feet, is the earliest example of a building with torus-roll up the corners. The fluted columns were 21 ft. high, but engaged and not free-standing. The courses were only about 8 inches thick, and the limestone rather brittle, so the idea of a free-standing column, over seven diameter high, distressed these earliest architects, and every column in the place is at the end of a short supporting wall which joins it to a back wall. Each of the forms of blocks which serve as evidence for reconstruction are detailed here.

A large court, supposed to belong to *heb sed* ceremonies, is 310 feet long and 60 feet wide, with a dozen small chambers along each side. The details of re-construction of the plan are fully stated, and throughout this article there is a refreshing contrast to the fanciful treatment too often followed.

CHEVRIER, H.—*Rapport sur les travaux de Karnak* (1927–8). The work at Karnak this year was on the iiird pylon, the column of Taharqa, temple of Khonsu, and Hypostyle Hall. The heart of the pylon is being entirely removed, and the sides propped up, meanwhile. In it were found blocks of Tehutmes III, IV, Amenhetep I, and many structural pieces, a fine head of a king's statue, 39 blocks of the chapel of the queen of Tehutmes III (making 261 in all) and more of the shrine of Senusert I. In reality, many stages of the monumental history are being discovered, and it will convert Karnak into a forest of temples and shrines, if they are all built up.

The column of Taharqa was in a perilous state; it has been all taken down, and solidly rebuilt with a core of reinforced concrete to steady it. At the temple of Khonsu, urgent repairs have been done, but the whole of it needs re-conditioning, to avert ruin. The ground of the Hypostyle Hall continues to yield earlier monuments; a stele of Suazenra (xivth dynasty) who sold his governorship of el Kab for 60 *deben* of gold, about £700 of gold, worth ten times as much in goods then; a pillar of Senusert I; more fragments of Akhenaten; a colossal uraeus (headless) of Psamtek I; and an interesting block of Amenhetep II, on which he is riding in a chariot and shooting at targets.

The shrine of Senusert I has been further reconstituted, and is here published. It was a processional shrine, with entry at each end, and a colonnade at each side, linked by dwarf walls, like the destroyed shrine on Elephantine.

GAUTHIER, H.—*Un vice-roi d'Éthiopie enseveli à Bubastis.* The railway men removing earth at Bubastis found two brick vaults containing sarcophagi. One of these was very large, of red granite, 9 ft. 8 ins. long, 6 ft. 6 ins. high; the lid was anciently broken, and only two little pots were left inside. The texts stated that it was for a royal son of Kush, over the foreigners of the south, fan bearer at the right of the king, royal scribe, Hora, son of the royal son of Kush, Hora. He was viceroy under Ramessu IV; so far, only three monuments of him were known.

The tomb of another viceroy On-hetep, has been found at Thebes. Setau, the viceroy whose coffin lid is in the British Museum, also had his tomb at Thebes.

NEWBERRY, P. E.—*An unpublished monument of a priest of the double axe.* This door jamb, from a tomb of Hetep-heren-ptah in the Cairo Museum, has not been published, and has no history. The man was a great pluralist in the iiird dynasty, having twenty titles. Of these six have the axe as word-sign for architect, descending from the times of wooden building. The "servant of the double axe" is a rare title, and the use of *khet*, "servant," for a priesthood is very early. Five of the titles are said to be unknown elsewhere, but the *ur met*, "mayor of the ten" is well known, the ten being a subdivision of the northern and southern councils of thirty. The councils of ten are named as having a scribe (Vienna, L. 248) and a messenger (Petrie, *Season* 79), a director of the south ten (Cairo, 20628 L.D. II, 357), and many other such titles, "a mayor, peer (*uati*) in the seat of ten" (Mar. Abyd. II, 56). There were other councils of twenty, such as the "south twenty" (Petrie, *Season* 303); the larger council of thirty occurs in a very usual title, and the "words of the thirty" are named (*Brug. Thes.* V, 950). This group was described in *Ancient Egypt*, 1925, 48.

NEWBERRY, P. E.—*A statue of ... Amenhetep son of Hapu.* This headless squatting figure from the temple of Mut is identified with the celebrated Amenhetep son of Hapu, by having the same titles.

ENGELBACH, R.—*On the accuracy of a monolithic column.* The method of forming a column, and the mode of arranging such work, involve much more than the work of dressing a flat block. A granite column of Sahura from Abusir was selected. To measure it, a circle was drawn on two semicircular pieces of wood, which were then placed around the foot of the column. The circle was divided into forty parts. Then a plumb bob was hung from an arm placed on the top of the column, and adjusted till it was exactly over the circle at one part. Offsets from the column to the plumb line were then read, and this was repeated at each of the forty divisions around the column. Thus the circularity and straightness were completely tested. [If such a test is made again, it might be shorter to fix a centering on the top of the column, with an arm turning around the centre to carry the plumb line.] The results are complicated by the error in setting the column vertical in the Museum, the tilt of 10′ of angle making $7\frac{1}{2}$ inches of displacement in the whole height. Whether this is due to the base being cut askew to the axis is not stated;

perhaps the columns were cut so as to stand vertical on a step which sloped 10′ for the sake of drainage. The errors of cutting are tabulated by Mr. Engelbach; on the circularity, the maximum errors in each circle average 0·2 inch, slightly less in the excess and more in the deficiency. The average error of straightness is much less, being only 0·05 inch. This is likely, as it would be much easier to test by a straight line than by a circular template. The diagram of the successive circles of measurement is made more obvious by the principle of concentrated errors (such as were used in the Pyramid survey of 1882). For testing the straightness of the surface, the offset rods and line would no doubt be used, for such were in use in the xiith dynasty, as found at Kahun in 1889. The problem of cutting the butt is scarcely solved by making it square to axis points which would be difficult for reference. The amount of tapering of the column (in which there is no entasis) is 1 on 23, or 1 on 46 slope. If the two ends of the block were dressed parallel, and a circle of the required size was set out on each end, and the stone dressed to that, then all the rest could be done by trimming down, till the string line was straight from one circle to the other at all points around: thus no template would be wanted, and the dressing could be done after setting up the column in the rough.

Gunn, B.—*Inscriptions from the Step Pyramid site.* On the north side of the pyramid, a heap of fragments of stone vases was dumped from the interior of the pyramid. The inscribed fragments, along with some others, are here published. They are much like the inscriptions on the bowls from the Royal Tombs: such are often the names of departments to which the bowls belonged,—the food, the toilet, or the travelling outfit. The sign *as* is evidently a bundle of papyrus rolls tied in the middle, and with a band round each end, to prevent twisting or catching (*Medum*, xiii, xiv). As such, it cannot mean primarily a tomb, a chamber, a palace, a troop, a priestly title, or any other of the usages of the word; it always needs a determinative, to show to what it applies. The instances of use of the word are given in *Anc. Eg.* 1925, 52. The function of "register" or "registry" is the only applicable value in all cases; "register of men of his majesty" "registers of all things of the king" "registers of food," have no building determinative. These bowls (ii, 9–12) are inscribed to show that they are on the register of the food department.

The signs of the king with *nub nefer* (ii, 7, 8), does not mean a king of that name, but that the bowl belongs to the *nub*,—golden,—burial-chamber of the king, which place is entitled *nefer*. That is therefore a second endorsement, after the marking that it belonged to the palace Ment-onkh. The signs  seem to mark this as a tribute from a foreign land. There are many examples of  as meaning tribute; we see the bringing of a tribute of foreign girls (*nesut amt*) (Sethe, Urk. I, 124), tribute of nomes, and of Asiatics (*Anc. Eg.* 1927, 114). It would be well to examine if the material of this bowl is different from that of others. The fitting together of the fragments of vases, and drawings of the forms, should give a large addition to the five hundred forms, published from fragments, in Royal Tombs.

Annals of Archaeology. Liverpool, 1927.

Griffith, F. Ll.—*Oxford excavations in Nubia.* This long article describes Christian remains at Faras, eighteen miles above Abu Simbel, of which a general

description appears by Mr. Dunbar in the present number. A church, of two different periods of building, overlay a cemetery of Christian period. Many of the tombs are of a type familiar in modern cemeteries in Egypt, where two long parallel walls form the ends of a row of barrel vaults between them, each vault having a doorway in one wall. Another cemetery lies to the west. An anchorite's grotto-chapel is described, much like that at Abydos, with painted inscriptions and subjects (*Tombs of the Courtiers*, xlix–liii). Thirty-one photographic plates portray the places and objects; these do not differ from the usual Byzantine style in Egypt, except in the thin Nubian pottery.

1929. Mond, Robert, and Emery, W. B.—*Excavations at Armant.* In 1926 a rough survey was made of the site of the cemetery of the sacred bulls, a concession was granted, and work was begun in 1927. Two Saitic burials of mothers of the bulls were found in vaulted tombs of brickwork. A long vaulted passage was opened which passed through the court of one tomb, and then dipped down to pass below the court of the other tomb, which was at a higher level.

The sarcophagi were enormous blocks of quartzite sandstone, 140 × 89 inches, and 83 high, besides a lid 27 thick. The lid is estimated at 20 tons, but it had not been removed; the sarcophagus had been plundered by breaking away the side. The head of the cow had been taken out, but fragments were found at the stone gateway to the tomb. Only some beads and gold foil remained behind. The second burial was shallower, but similar; the body of the cow remained, with beads and gold foil though the head had been removed.

In the open court (about 24 × 26 feet) of the deeper burial is a square pit, about 9 × 14 feet, with a stairway against one wall. At 13 feet down, the water level is reached, and a doorway on one side leads to a stairway descending under water. This rise of water level of the country, even blocking Saitic work, makes it probable that any burials of early times will be almost inaccessible. Further work has been done in 1929, which has reached the bull burials, at a site about eight hundred feet nearer to the Nile. This excavation will be attended by Mr. Oliver Myers, coming from our work at Beth-pelet.

Hall, H. R.—*Some Egyptian axe heads in the British Museum.* Photographs are given of four open-work bronze axe heads. The subjects of these are (A) Two figures of Taurt as supporters to a column; (B) Lotus group with a bird; (C) Two bulls fighting; (D) A wolf catching a gazelle.

Hall, H. R.—*Theriomorphic Canopic jar heads of the Middle Kingdom* (?). These blue glazed heads are considered to "have an archaic appearance," and the glaze is said to be "distinctly of xiith dynasty character ... if they cannot be of the xiith dynasty I do not believe them to be later than the xviith."

Mond, Robert, and Emery, W. B.—*The Burial shaft of the tomb of Amenemhat.* This account is illustrated with fifty plates which show the stages of the excavation, and the mummies that were found. The names on the coffins are (1) Sumathu, with a scarab of Horemheb, but called "Saitic": (2) Nemayn, (3) Ta-yst-Mut-ta-urt (Isis the Great Mother), (4) Neferarti (surely xixth), (5) Horpuy, (6) Aten-em-uben (surely xviiith), (7) Pesh-en-mut and (8) Hentmer. The part of a whip handle is an unusual object. There were five foreign jugs with vertical lines in the burial with the Horemheb scarab.

NOTES AND NEWS.

We much regret to record the loss of our former Treasurer Mr. Sefton Jones, who passed away after a long illness. His wide knowledge of the East and his business abilities made his advice and help of special value, and his interest in such work accorded with the active assistance rendered by Mrs. Sefton Jones, with whom we deeply sympathise.

The students of the British School arrived at Beth-pelet and began work on November 14. One of the first things was the clearance of the northern edge of the Egyptian residency of the xviiith–xxth dynasties, which had been covered by part of the wall of Shishak. This side had suffered from a very fierce fire, the fresh north wind reaching it first. In one room were remains of forty-five large wine jars, completely covering the floor; these had been smashed into small fragments by the fall of the burning roof beams. Such of the sealings as were legible showed that these held Syrian wine, as the seal is of a god with tall cap, standing on the back of (apparently) a dog, with turned-up tail.

The neolithic settlements are being worked, some only surface deposits; another is several feet deep, producing shards with colour-wash and cross lines, but without any microlith cores, which were so abundant last year. More palaeolithic sites are also being found.

The anti-Jewish riots extended to Gaza, where Major Partridge rescued thirty Jews, and sent them to safety at Jaffa. The mob of hooligans then burnt the shop of the best grocer in the town, to the great regret of our party whom he supplied. The Bedawy had been vilely told that Palestine had been sold to the Jews, and that Jews had killed Muslims at prayer in the mosque (*ex* Christian church) of El Aksa, and blown it up with bombs. Unfortunately the wretches who stirred up murder by these means cannot be caught. The Bedawy around our work are all quite quiet and pleasant, and officially we are welcomed as helping the cause of peace.

At home the affairs of the School are going forward. Lady Petrie has been giving many lectures, and was intending to spend the winter in active work for the excavations. She was knocked down and run over in November, however, and has been laid up in bed and doing office work for many weeks. The finances suffered greatly, and it is only by the kind help of personal friends that we have tided over the disaster.

It is hoped that many will come forward with donations to help on the digging at present in progress, and that arrears will be made up. It is not proposed to lessen our activities, if we can surmount present difficulties and gain adequate support.

All donations may be addressed to

Lady Petrie, University College, Gower Street, W.C. 1.

Ancient Egypt 1930 part I will be issued shortly. Associates of the School are asked to forward ten shillings, for which receipt will be sent, also the Journal and various notices. Ordinary subscription to the Journal alone is seven shillings.